



**FIRST QUARTER 2006**  
**QUARTERLY GROUNDWATER MONITORING REPORT**

Sampled on February 14, 2006

Job # SP-150

LOP # 12170

**Big Oil & Tire - Glendale BP (Glendale 76)**

1497 Glendale Road  
Arcata, California 95521

May 11, 2006

This *Quarterly Groundwater Monitoring Report* was prepared by SounPacific staff for Big Oil & Tire Co. (BO&T), using data from previous studies that were conducted by Clearwater Group, Inc. (CGI) and SounPacific Environmental Services (SounPacific) and a review of relevant files at Humboldt County Division of Environmental Health (HCDEH). Glendale 76 (the Site) is located at 1497 Glendale Road, in Arcata, California (Figure 1).

**SITE DESCRIPTION**

The subject property consists of a single story building with an attached storage building. Surfaces onsite consist of concrete, asphalt, gravel, and vegetation. The main structure is positioned in the center of the property with the entrance to the building facing south towards Glendale Road. A second storage building is located next to the eastern property line in the southern portion of the property (Figure 2).

Four (4) 4,000-gallon underground storage tanks (USTs) were located in a single excavation adjacent to the southeast corner of the primary structure, and were previously used for storage of three (3) grades of unleaded gasoline. Two (2) dispensers, which were previously used for dispensing fuel onsite, were located on a cement island adjacent to the entrance of the primary structure. A second cement island was located adjacent to the southern property line. The Site is serviced by public utilities. Surface water flows into storm drains (Figure 2).

## **SITE TOPOGRAPHY AND LAND USE**

The subject property was previously used as a retail gas station and mini-mart. The property is currently vacant. The Site is located approximately 1,200 feet north of the Mad River and approximately 96 feet above mean sea level. The Site is located in an area of low topographic relief (Figure 1). Surrounding land use in the immediate vicinity is rural with an interspersed of commercial and residential properties. Murphy's Market resides adjacent to the west of the Site. Residential properties lie directly to the east of the Site. Blue Lake Forest Products lies adjacent to the north of the Site. Glendale Road runs adjacent to the southern property line. A commercial storage yard lies directly to the south of the Site, adjacent to the south side of Glendale Road.

## **SITE HISTORY**

Previous studies by Clearwater Group, Inc. (CGI) and SounPacific indicated the following historical information:

### **1998 Initial Subsurface Investigation (CGI)**

In 1998, prior to the interior lining of the Site's USTs, as part of the UST system upgrade requirements, HCDEH required a subsurface investigation to determine if a release had previously occurred associated with the USTs. On January 13, 1998, four (4) soil borings (B-1, B-2, B-3, and B-4) were drilled by Diamond Core Drilling of Redding, California in the vicinity of the Site's USTs with the objective of collecting soil and groundwater samples to determine if any petroleum contamination was present that had originated from the UST system. In addition, three additional

borings (B-5, B-6, and B-7) were hand augured for the collection of subsurface samples. The locations of the borings are shown in Figure 3. Soil and groundwater samples were collected from each boring location, and with the exception of MTBE at levels of 17 parts per million (ppm), no contamination was identified in the soils. However, TPHg was reported in all four groundwater samples collected, along with elevated levels of BTXE and MTBE. The highest levels of groundwater contamination were reported from borings B-3 and B-4, located on the west and south sides of the USTs, respectively. Laboratory analytical results for the soil and groundwater samples from this investigation are summarized in Tables 1 and 2, respectively.

### **2002 Subsurface Investigation (SounPacific)**

In April 2002, a subsurface investigation was conducted by SounPacific that consisted of drilling and sampling nine (9) soil borings (B-8 through B-12, and MW-1 through MW-4) (Figure 3). Four monitoring wells were installed in the same positions as borings MW-1 through MW-4. Laboratory analytical reported minimal hydrocarbon concentrations in soils from borings B-10, B-12, and MW-1 (Table 1). However, elevated concentrations of TPHg, BTXE, MTBE, and TAME were detected in groundwater samples, particularly in the samples from borings B-10 and B-11 (Table 2), which were located to the south of the USTs.

### **2004 UST Removal (SounPacific)**

In October 2004, Beacom Construction (Beacom) removed four gasoline USTs. Eight (8) compliance soil samples were collected from UST pit at opposite ends of each UST and two (2) additional soil samples were collected from the east and west sidewalls. Laboratory analytical reported elevated concentrations of TPHg and BTXE in samples 2S, 4N, and 4S (Table 1). In addition, elevated concentrations of TPHd were also detected in soil sample 2S.

### **2005 Subsurface Investigation (SounPacific)**

During September and October 2005, SounPacific conducted a subsurface investigation that took place in three phases. Phase I occurred on September 28, 2005, and consisted of hand-auguring six (6) horizontal borings (B-19 through B-24) in the sidewalls of the UST excavation pit. Soil samples were collected from all borings at horizontal depths of one (1) and three (3) feet. Phase II

occurred on October 5, 2005, and consisted of the removal of the product lines, vent piping and fuel dispenser islands associated with the former USTs. This phase of the investigation was carried out using a backhoe. Eight (8) soil samples (PR-1 through PR-8) were collected along the piping runs at depths of 1.5 feet and 2 feet bgs. Phase III occurred on October 11, 2005, and consisted of drilling eight (8) direct-push borings (B-11 through B-18) to determine the limits of the proposed excavation.

Soil analytical results from recent and previous investigations have confirmed that the previously suspected soil contamination does exist adjacent to the UST area, dispensers, and product lines and that further excavation is necessary adjacent to the south of the former UST pit, former fuel dispenser islands and along the product lines (Table 1).

### **2005 Soil Excavation (SounPacific)**

Soil sampling results from the removal of the Site's USTs and site subsurface investigations concluded that soil contamination was present at the Site that exceeded the 100 ppm clean-up standard and hence required remediation. The contaminated soil was removed during the period November 8 through November 11, 2005, when clean-up standards had been achieved in all accessible areas. Seven (7) confirmation soil samples were collected from the excavation to document the soil contamination levels at the extent of the excavation. All confirmation soil samples reported TPHg levels less than one (1) ppm, except sample SW-6@5' that reported TPHg at a concentration of 1.8 ppm, and hence meet the clean-up criteria (Table 1). At the completion of the removal activities, an area of approximately 2,625 square feet and to an average depth of ten feet bgs had been excavated. During the excavation process groundwater monitoring well MW-4 was destroyed. A total of 335.34 tons (approximately 450 cubic yards) of petroleum-contaminated soil was removed from the Site and disposed of at Bio Industries in Red Bluff, California.

## **RESULTS OF QUARTERLY SAMPLING**

Under the approval of HCDEH, SounPacific is continuing with quarterly groundwater monitoring until further notice. Quarterly water level data will be used to input into a three-point gradient problem to generate a two-dimensional groundwater elevation contour diagram and calculate groundwater flow direction. Quarterly sampling events monitor the fluctuation of hydrocarbon contamination levels present in the groundwater beneath the Site. Monitoring well MW-4 was destroyed during the November 2005 excavation of contaminated soils. The remaining three groundwater monitoring wells were gauged and sampled on February 14, 2006.

### **FIELD DATA**

<b>Wells gauged:</b>	MW-1, 2, and 3
<b>Groundwater Elevation:</b>	Ranged from 86.54 to 86.89 feet above mean sea level (Table 3)
<b>Depth to Groundwater:</b>	Ranged from 9.49 to 9.91 feet below the top of casing (Table 3)
<b>Floating product:</b>	Sheen detected in wells MW-1 and 2
<b>GW flow direction:</b>	SSE (Figure 4)
<b>GW Gradient:</b>	0.009 feet per foot (Figure 4)

On February 14, 2006, the depth to groundwater in the Site's three monitoring wells ranged from 9.49 feet below top of casing (btc) in well MW-3 to 9.91 feet btc in MW-2. When corrected to mean sea level, water level elevations ranged from 86.54 feet above mean sea level (amsl) in MW-2 to 86.89 feet amsl in MW-1. Groundwater levels for the February 14, 2006, monitoring event, along with historical levels and elevations are included in Table 3. Groundwater flow was towards the south-southeast with a gradient of 0.009 feet per foot. The groundwater flow and gradient are graphically depicted in Figure 4. Prior to sampling, all wells were purged; the groundwater field parameters for each well are presented on the following page.

**MONITORING WELL MW-1 GROUNDWATER FIELD PARAMETERS**

<b>Time</b>	<b>Total Vol. Removed/ gal</b>	<b>pH</b>	<b>Temp./ F</b>	<b>Cond./ ms(cm)<sup>-1</sup></b>
3:04 pm	0	4.82	57.67	0.058
3:09	1.5	4.75	57.89	0.216
3:14	3.0	4.76	57.94	0.058
3:17	4.5	4.77	57.84	0.072

**MONITORING WELL MW-2 GROUNDWATER FIELD PARAMETERS**

<b>Time</b>	<b>Total Vol. Removed/ gal</b>	<b>pH</b>	<b>Temp./ F</b>	<b>Cond./ ms(cm)<sup>-1</sup></b>
2:38	0	5.03	58.26	0.109
2:42	1.4	4.83	58.69	0.078
2:47	2.8	4.91	58.74	0.109
2:50	4.2	4.93	58.55	0.109

**MONITORING WELL MW-3 GROUNDWATER FIELD PARAMETERS**

<b>Time</b>	<b>Total Vol. Removed/ gal</b>	<b>pH</b>	<b>Temp./ F</b>	<b>Cond./ ms(cm)<sup>-1</sup></b>
2:08	0	4.61	56.91	0.049
2:14	1.6	4.46	57.29	0.046
2:19	3.2	4.53	57.19	0.045
2:26	4.8	4.53	57.08	0.046

## **ANALYTICAL RESULTS**

**Sampling locations:** MW-1, 2, and 3

**Analyses performed:** TPHg, BTXE, MTBE, TPHd, and TPHmo

**Laboratories Used:** Basic Laboratory, Inc, Redding California (ELAP #1677)

The analytical results for the current monitoring event are presented below and graphically depicted in Figure 5. The laboratory report is included as Appendix A. The historical analytical results for all monitoring wells, since the implementation of groundwater monitoring are included as Table 4.

	<u><b>MW-1</b></u>	<u><b>MW-2</b></u>	<u><b>MW-3</b></u>
	<b>(ppb)</b>	<b>(ppb)</b>	<b>(ppb)</b>
<b>TPHg:</b>	<b>641</b>	ND < 50.0	ND < 50.0
<b>Benzene:</b>	<b>25.4</b>	ND < 0.5	ND < 0.5
<b>Toluene:</b>	<b>128</b>	ND < 0.5	ND < 0.5
<b>Xylenes:</b>	<b>117</b>	ND < 1.0	ND < 1.0
<b>Ethylbenzene:</b>	<b>28.7</b>	ND < 0.5	ND < 0.5
<b>MTBE:</b>	<b>29.2</b>	<b>36.0</b>	<b>14.1</b>
<b>TPHd:</b>	ND < 56	ND < 50	<b>55</b>
<b>TPHmo:</b>	ND < 56	<b>116</b>	<b>93</b>

(ND = non-detectable)

## **COMMENTS AND RECOMMENDATIONS**

On February 14, 2006, the 1<sup>st</sup> Quarter of groundwater monitoring for 2006 and the 15th groundwater monitoring event since the well installation and initial sampling of the Site's groundwater monitoring wells in May 2002 was conducted at the Glendale 76 property at 1497

Glendale Road, California. A summary of the results are presented on the next page.

- The depth to groundwater in the three onsite wells ranged between 9.49 feet btoc (MW-3) to 9.91 feet btoc (MW-2). Groundwater flow was towards the south southeast at a gradient of 0.009 feet per foot.
- Groundwater samples from the three onsite wells (MW-1 through MW-3) were collected and analyzed for TPHg, BTXE, MTBE, TPHd, and TPHmo. Laboratory analytical results reported TPHg, with the BTXE compounds in well MW-1 only, with TPHg at a concentration of 641 ppb, and the BTXE compounds at concentrations of 25.4 ppb, 128 ppb, 117 ppb, and 28.7 ppb, respectively. MTBE was reported in all the wells at concentrations ranging between 14.1 ppb (MW-3) to 36.0 ppb (MW-2). Also, laboratory results reported TPHd in MW-3 at a concentration of 55 ppb (MW-3), and TPHmo was reported in MW-3 and MW-2 wells at concentrations of 93 ppb and 116 ppb, respectively.

Based upon these results the following observations and conclusions have been made.

- Detectable levels of TPHg in well MW-1 have been reported during eight out of the Sites sixteen sampling events. TPHg has been reported in well MW-2 during ten out of sixteen sampling events. TPHg has consistently been reported in well MW-3, with concentrations fluctuating over time. See Figures 6 through 8.
- Since the implementation of groundwater monitoring, BTXE has been reported during different monitoring events in all wells. BTXE levels in well MW-1 have been inconsistent, but during this quarter of sampling, the concentrations were the greatest detected thus far. Monitoring well MW-2 reported the presence of BTXE during the fourth quarter 2004 for the first time since the first quarter 2003. BTXE has consistently been reported in well MW-3, although concentrations were non-detect during this quarter of sampling. See Figures 6 through 8.

- MTBE was present in all wells during the last monitoring event, and has consistently been present in all wells since the inception of groundwater monitoring. In general, there has been an overall decrease in MTBE levels in all wells over time, see Figures 6 through 8.
- Laboratory analytical reported TPHd four times in well MW-1, twice in well MW-2, and seven times in well MW-3 since the inception of the monitoring program. Overall, TPHd concentrations seem to be decreasing at this site. See Figures 6 through 8.
- TPHmo was reported four times in wells MW-1 and MW-3, and five times in well MW-2 during the last five sampling events, due to the decreased reporting limit. See Figures 6 through 8.

Based on the results of the February 2006 monitoring event and historical results, the following future activities are proposed.

- Quarterly groundwater monitoring will be continued until further notice. Quarterly groundwater level measurements will be collected from the three (3) onsite monitoring wells to determine groundwater flow direction and gradient. Collected groundwater samples will be analyzed for TPHg, BTXE, MTBE, TPHd, and TPHmo. TPHd and TPHmo analysis will be conducted with a silica gel clean-up.
- In a recent Report of Findings, SounPacific proposed conducting additional subsurface investigation at the Glendale 76 site that included further delineation of soil and groundwater for MTBE, along with the installation of new groundwater monitoring wells and the replacement of monitoring well MW-4 that was destroyed during the November 2005 excavation of contaminated soil. HCDEH concurred with the proposed scope of work in a letter dated April 20, 2006 in which they requested that a Work Plan be prepared. The Work Plan is currently being prepared and will be submitted in due course.

## CERTIFICATION

This report was prepared under the direct supervision of a California registered geologist at SounPacific. All information provided in this report including statements, conclusions and recommendations are based solely upon field observations and analyses performed by a state-certified laboratory. SounPacific is not responsible for laboratory errors.

SounPacific promises to perform all its work in a manner that is currently used by members in similar professions working in the same geographic area. SounPacific will do what ever is reasonable to ensure that data collection is accurate. Please note however, that rain, buried utilities, and other factors can influence groundwater depths, directions and other factors beyond what SounPacific could reasonably determine.

SounPacific

Prepared by:

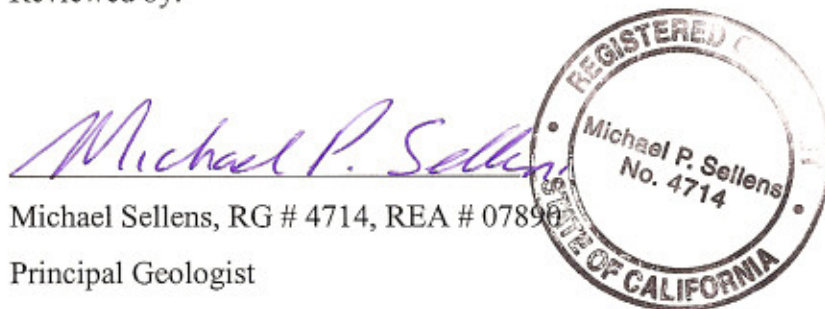


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## **ATTACHMENTS**

### **TABLES & CHART**

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Figure 8:	MW-3 Hydrocarbon Concentrations vs. Time

### **APPENDICES**

Appendix A:	Laboratory Report and Chain-of-Custody Form
Appendix B:	Standard Operating Procedures
Appendix C:	Field Notes

## **Tables & Chart**

**Table 1**  
**Soil Analytical Results**  
 Glendale 76  
 1497 Glendale Road  
 Arcata, California 95521

Sample ID	Sample Location	Sample Date	TPHg (ppm)	Benzene (ppm)	Toluene (ppm)	Xylenes (ppm)	Ethylbenzene (ppm)	MTBE (ppm)	DIPE (ppm)	TAME (ppm)	ETBE (ppm)	TBA (ppm)	TPHd (ppm)	Lead (ppm)
SB-1 @ 8.5	SB-1	1/13/1998	ND < 5	<b>0.07</b>	ND < 0.03	ND < 0.03	ND < 0.03	<b>0.4</b>	----	----	----	----	ND < 1	----
SB-2 @ 9.5	SB-2	1/13/1998	ND < 5	ND < 0.03	ND < 0.03	ND < 0.03	ND < 0.03	ND < 0.3	----	----	----	----	ND < 1	----
SB-3 @ 9.5	SB-3	1/13/1998	ND < 20	<b>0.6</b>	<b>0.5</b>	<b>0.6</b>	<b>0.4</b>	<b>17</b>	----	----	----	----	ND < 1	----
SB-4 @ 2.5	SB-4	1/13/1998	ND < 1	<b>0.065</b>	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.05	----	----	----	----	ND < 1	----
SB-4 @ 9.5	SB-4	1/13/1998	ND < 2	ND < 0.01	ND < 0.01	ND < 0.01	ND < 0.01	<b>0.2</b>	----	----	----	----	ND < 1	----
SB-5 @ 2.5	SB-5	1/13/1998	ND < 5	ND < 0.03	ND < 0.03	ND < 0.03	ND < 0.03	ND < 0.3	----	----	----	----	<b>4</b>	----
SB-6 @ 2.5	SB-6	1/13/1998	ND < 5	ND < 0.03	ND < 0.03	ND < 0.03	ND < 0.03	ND < 0.3	----	----	----	----	<b>3</b>	----
SB-7 @ 2.5	SB-7	1/13/1998	ND < 1	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.05	----	----	----	----	ND < 1	----
SB-8 @ 4'	B-8	4/25/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.02	----	ND < 0.10
SB-8 @ 8'	B-8	4/25/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.02	----	ND < 0.10
SB-8 @ 12'	B-8	4/25/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.02	----	ND < 0.10
SB-8 @ 16'	B-8	4/25/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	<b>0.005</b>	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.02	----	ND < 0.10
SB-9 @ 4'	B-9	4/24/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.02	----	<b>0.12</b>
SB-9 @ 8'	B-9	4/24/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.02	----	ND < 0.10
SB-9 @ 12'	B-9	4/24/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.02	----	ND < 0.10
SB-9 @ 16'	B-9	4/24/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.02	----	ND < 0.10
SB-10 @ 4'	B-10	4/25/2002	ND < 1	<b>0.014</b>	ND < 0.002	ND < 0.006	<b>0.003</b>	<b>0.528</b>	ND < 0.005	<b>0.064</b>	ND < 0.005	ND < 0.02	----	ND < 0.10
SB-10 @ 8'	B-10	4/25/2002	<b>2</b>	<b>0.011</b>	ND < 0.002	ND < 0.006	<b>0.018</b>	<b>1.58</b>	ND < 0.005	<b>0.216</b>	ND < 0.005	ND < 0.02	----	ND < 0.10
SB-10 @ 12'	B-10	4/25/2002	<b>4</b>	<b>0.11</b>	<b>0.021</b>	<b>0.156</b>	<b>0.055</b>	<b>2.11</b>	ND < 0.005	<b>0.292</b>	ND < 0.005	ND < 0.02	----	ND < 0.10
SB-10 @ 16'	B-10	4/25/2002	<b>4</b>	<b>0.086</b>	<b>0.314</b>	<b>0.204</b>	<b>0.058</b>	<b>1.1</b>	ND < 0.005	<b>0.156</b>	ND < 0.005	ND < 0.02	----	ND < 0.10
SB-11 @ 4'	B-11	4/24/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.02	----	ND < 0.10
SB-11 @ 8'	B-11	4/24/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.02	----	ND < 0.10
SB-11 @ 12'	B-11	4/24/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.02	----	ND < 0.10
SB-11 @ 16'	B-11	4/24/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.02	----	ND < 0.10
SB-12 @ 4'	B-12	4/25/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	<b>0.006</b>	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.02	----	ND < 0.10
SB-12 @ 8'	B-12	4/25/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	<b>0.074</b>	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.02	----	ND < 0.10
SB-12 @ 12'	B-12	4/25/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	<b>0.148</b>	ND < 0.005	<b>0.017</b>	ND < 0.005	ND < 0.02	----	ND < 0.10
SB-12 @ 16'	B-12	4/25/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	<b>0.051</b>	ND < 0.005	<b>0.005</b>	ND < 0.005	ND < 0.02	----	ND < 0.10
MWSB-1 @ 4'	MW-1	4/26/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	<b>0.141</b>	ND < 0.005	<b>0.009</b>	ND < 0.005	ND < 0.02	----	ND < 0.10
MWSB-1 @ 8'	MW-1	4/26/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	<b>0.16</b>	ND < 0.005	<b>0.013</b>	ND < 0.005	ND < 0.02	----	ND < 0.10
MWSB-1 @ 12'	MW-1	4/26/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	<b>0.744</b>	ND < 0.005	<b>0.114</b>	ND < 0.005	ND < 0.02	----	ND < 0.10

**Table 1 (cont.)**  
**Soil Analytical Results**  
 Glendale 76  
 1497 Glendale Road  
 Arcata, California 95521

Sample ID	Sample Location	Sample Date	TPHg (ppm)	Benzene (ppm)	Toluene (ppm)	Xylenes (ppm)	Ethylbenzene (ppm)	MTBE (ppm)	DIPE (ppm)	TAME (ppm)	ETBE (ppm)	TBA (ppm)	TPHd (ppm)	TPHmo (ppm)	Lead (ppm)
MWSB-2 @ 4'	MW-2	4/26/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.02	----	----	ND < 0.10
MWSB-2 @ 8'	MW-2	4/26/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	<b>0.006</b>	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.02	----	----	ND < 0.10
MWSB-2 @ 12'	MW-2	4/26/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	<b>0.034</b>	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.02	----	----	ND < 0.10
MWSB-3 @ 4'	MW-3	4/25/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.02	----	----	ND < 0.10
MWSB-3 @ 8'	MW-3	4/25/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.02	----	----	ND < 0.10
MWSB-3 @ 12'	MW-3	4/25/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.02	----	----	ND < 0.10
MWSB-4 @ 4'	MW-4	4/25/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.02	----	----	ND < 0.10
MWSB-4 @ 8'	MW-4	4/25/2002	ND < 1	ND < 0.002	ND < 0.002	ND < 0.006	ND < 0.002	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.02	----	----	ND < 0.10
MWSB-4 @ 12'	MW-4	4/25/2002	<b>2</b>	<b>0.104</b>	<b>0.07</b>	<b>0.454</b>	<b>0.037</b>	<b>0.618</b>	ND < 0.005	<b>0.055</b>	ND < 0.005	<b>0.436</b>	----	----	ND < 0.10
UST PIT @ 11'	1N	10/27/2004	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	<b>0.055</b>	ND < 0.005	<b>0.014</b>	ND < 0.005	ND < 0.050	ND < 1.0	----	----
UST PIT @ 11'	1S	10/27/2004	ND < 1.0	<b>0.011</b>	ND < 0.005	ND < 0.015	ND < 0.005	<b>0.091</b>	ND < 0.005	<b>0.017</b>	ND < 0.005	ND < 0.050	<b>4.3</b>	----	----
UST PIT @ 11'	2N	10/27/2004	ND < 1.3	<b>0.054</b>	<b>0.093</b>	<b>0.176</b>	<b>0.043</b>	<b>0.50</b>	ND < 0.013	<b>0.17</b>	ND < 0.013	ND < 0.13	<b>3.5</b>	----	----
UST PIT @ 11'	2S	10/27/2004	<b>900</b>	ND < 1.0	ND < 1.0	<b>21</b>	<b>9.3</b>	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	<b>120*</b>	----	----
UST PIT @ 11'	3N	10/27/2004	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	<b>0.043</b>	ND < 0.005	<b>0.016</b>	ND < 0.005	ND < 0.050	<b>3.3</b>	----	----
UST PIT @ 11'	3S	10/27/2004	<b>18</b>	<b>0.035</b>	ND < 0.025	<b>0.23</b>	<b>0.095</b>	<b>0.24</b>	ND < 0.025	<b>0.079</b>	ND < 0.025	ND < 0.25	<b>3.9</b>	----	----
UST PIT @ 11'	4N	10/27/2004	<b>320</b>	<b>2.5</b>	<b>18</b>	<b>37</b>	<b>7.2</b>	ND < 0.50	ND < 0.50	ND < 0.50	ND < 0.50	ND < 5.0	<b>14*</b>	----	----
UST PIT @ 11'	4S	10/27/2004	<b>600</b>	ND < 0.50	<b>3.2</b>	<b>53</b>	<b>11</b>	ND < 0.50	ND < 0.50	ND < 0.50	ND < 0.50	ND < 5.0	<b>13*</b>	----	----
UST PIT @ 6'	SW-W	10/27/2004	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	<b>0.046</b>	ND < 0.005	<b>0.011</b>	ND < 0.005	ND < 0.050	ND < 1.0	----	----
UST PIT @ 6'	SW-S	10/27/2004	ND < 1.0	ND < 0.005	ND < 0.005	<b>0.024</b>	<b>0.006</b>	<b>0.072</b>	ND < 0.005	<b>0.017</b>	ND < 0.005	ND < 0.050	<b>1.8</b>	----	----
B-19 @ 1'	UST PIT	9/28/2005	ND < 1.0	ND < 0.0050	ND < 0.0050	ND < 0.0150	ND < 0.0050	ND < 0.025	ND < 0.020	ND < 0.020	ND < 0.020	ND < 0.50	ND < 1.0	ND < 10	----
B-19 @ 3'	UST PIT	9/28/2005	<b>130</b>	<b>0.015</b>	<b>1.9</b>	<b>15.7</b>	<b>2.5</b>	ND < 0.025	ND < 0.020	ND < 0.020	ND < 0.020	ND < 0.50	<b>33</b>	<b>13</b>	----
B-20 @ 1'	UST PIT	9/28/2005	ND < 1.0	ND < 0.0050	ND < 0.0050	<b>0.0177</b>	ND < 0.0050	ND < 0.025	ND < 0.020	ND < 0.020	ND < 0.020	ND < 0.50	ND < 1.0	ND < 10	----
B-20 @ 3'	UST PIT	9/28/2005	ND < 1.0	ND < 0.0050	ND < 0.0050	ND < 0.0150	ND < 0.0050	ND < 0.025	ND < 0.020	ND < 0.020	ND < 0.020	ND < 0.50	ND < 1.0	ND < 10	----
B-21 @ 1'	UST PIT	9/28/2005	ND < 1.0	ND < 0.0050	<b>0.022</b>	ND < 0.0150	ND < 0.0050	ND < 0.025	ND < 0.020	ND < 0.020	ND < 0.020	ND < 0.50	ND < 1.0	ND < 10	----
B-21 @ 3'	UST PIT	9/28/2005	<b>500</b>	<b>0.036</b>	<b>5.1</b>	<b>45</b>	<b>6.7</b>	ND < 0.025	ND < 0.020	ND < 0.020	ND < 0.020	ND < 0.50	<b>160</b>	<b>24</b>	----
B-22 @ 1'	UST PIT	9/28/2005	ND < 1.0	ND < 0.0050	<b>0.0074</b>	<b>0.0164</b>	ND < 0.0050	ND < 0.025	ND < 0.020	ND < 0.020	ND < 0.020	ND < 0.50	ND < 1.0	ND < 10	----
B-22 @ 3'	UST PIT	9/28/2005	<b>300</b>	<b>0.060</b>	<b>3.5</b>	<b>27.3</b>	<b>4.0</b>	ND < 0.025	ND < 0.020	ND < 0.020	ND < 0.020	ND < 0.50	<b>33</b>	<b>10</b>	----
B-23 @ 1'	UST PIT	9/28/2005	ND < 1.0	ND < 0.0050	ND < 0.010	<b>0.0221</b>	<b>0.0060</b>	ND < 0.025	ND < 0.020	ND < 0.020	ND < 0.020	ND < 0.50	ND < 1.0	ND < 10	----
B-23 @ 3'	UST PIT	9/28/2005	ND < 1.0	ND < 0.0050	ND < 0.0050	<b>0.0153</b>	ND < 0.0050	ND < 0.025	ND < 0.020	ND < 0.020	ND < 0.020	ND < 0.50	ND < 1.0	ND < 10	----
B-24 @ 1'	UST PIT	9/28/2005	<b>810</b>	ND < 0.0050	<b>0.019</b>	<b>2.98</b>	<b>0.43</b>	ND < 0.025	ND < 0.020	ND < 0.020	ND < 0.020	ND < 0.50	<b>22</b>	<b>29</b>	----
B-24 @ 3'	UST PIT	9/28/2005	<b>57</b>	<b>0.053</b>	<b>1.7</b>	<b>4.9</b>	<b>0.81</b>	ND < 0.025	ND < 0.020	ND < 0.020	ND < 0.020	ND < 0.50	<b>72</b>	<b>15</b>	----
PB-17 @ 4'	B-17	10/11/2005	<b>0.0655</b>	ND < 0.0050	ND < 0.0050	<b>0.0051</b>	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0500	ND < 10	ND < 10	----
PB-17 @ 8'	B-17	10/11/2005	<b>0.213</b>	ND < 0.0050	<b>0.0075</b>	<b>0.0242</b>	<b>0.0055</b>	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0500	ND < 10	ND < 10	----
PB-17 @ 11'	B-17	10/11/2005	<b>0.387</b>	ND < 0.0050	<b>0.0103</b>	<b>0.0144</b>	ND < 0.0050	<b>0.114</b>	ND < 0.0050	<b>0.0211</b>	ND < 0.0050	ND < 0.0500	ND < 10	ND < 10	----
PB-18 @ 4'	B-18	10/11/2005	<b>0.119</b>	ND < 0.0050	<b>0.0115</b>	<b>0.0090</b>	ND < 0.0050	<b>0.0159</b>	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0500	ND < 10	ND < 10	----
PB-18 @ 8'	B-18	10/11/2005	ND < 0.0600	ND < 0.0050	ND < 0.0050	<b>0.0063</b>	ND < 0.0050	<b>0.0074</b>	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0500	ND < 10	ND < 10	----
PB-18 @ 11'	B-18	10/11/2005	<b>508</b>	<b>1.94</b>	<b>51.6</b>	<b>85.8</b>	<b>14.2</b>	<b>7.57</b>	ND < 1.25	<b>1.61</b>	ND < 1.25	ND < 12.5	ND < 10	ND < 10	----
PB-18 @ 15'	B-18	10/11/2005	<b>0.272</b>	ND < 0.0050	<b>0.0122</b>	<b>0.0146</b>	ND < 0.0050	<b>0.0383</b>	ND < 0.0050	<b>0.0061</b>	ND < 0.0050	<b>0.0539</b>	ND < 10	ND < 10	----

\* : The sample chromatograph does not match the standard diesel chromatogram. All peaks were integrated within the diesel range. The result is an estimated value.

**Table 1 (cont.)**  
**Soil Analytical Results**  
 Glendale 76  
 1497 Glendale Road  
 Arcata, California 95521

Sample ID	Sample Location	Sample Date	TPHg (ppm)	Benzene (ppm)	Toluene (ppm)	Xylenes (ppm)	Ethylbenzene (ppm)	MTBE (ppm)	DIPE (ppm)	TAME (ppm)	ETBE (ppm)	TBA (ppm)	TPHd (ppm)	TPHmo (ppm)	Total Lead (ppm)
PR-1	Product Lines @ 1.5'	10/5/2005	350	0.59	14	27.6	4.4	9.3	ND < 0.020	ND < 0.020	1.7	ND < 0.50	20	120	----
PR-2	Product Lines @ 2'	10/5/2005	17	0.019	0.038	0.284	0.060	0.089	ND < 0.020	ND < 0.020	ND < 0.020	ND < 0.50	51	550	18
PR-3	Product Lines @ 1.5'	10/5/2005	230	0.79	15	23.4	3.8	39	ND < 1.0	4.7	ND < 1.0	ND < 25	110	230	----
PR-4	Product Lines @ 1.5'	10/5/2005	120	0.75	11	8.1	0.84	43	ND < 0.020	4.3	ND < 0.020	2.4	33	230	----
PR-5	Product Lines @ 2'	10/5/2005	89	0.057	0.16	6.6	1.7	0.47	ND < 0.020	0.16	ND < 0.020	ND < 0.50	26	61	----
PR-6	Product Lines @ 2'	10/5/2005	620	1.5	41	79	12	59	ND < 1.0	9.0	ND < 1.0	ND < 25	180	20	15
PR-7	Product Lines @ 1.5'	10/5/2005	88	1.1	15	7.1	1.5	32	ND < 0.020	3.3	ND < 0.020	1.6	26	390	----
PR-8	Product Lines @ 1.5'	10/5/2005	ND < 1.0	ND < 0.0050	0.027	0.0277	0.0060	ND < 0.025	ND < 0.020	ND < 0.020	ND < 0.020	ND < 0.50	2.8	45	----
PB-11 @ 4'	B-11	10/11/2005	ND < 0.0600	ND < 0.0050	ND < 0.0050	0.0057	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0500	ND < 10	ND < 10	----
PB-11 @ 8'	B-11	10/11/2005	3,890	22.1	400	506	88.1	105	ND < 12.5	16.6	ND < 12.5	ND < 125	ND < 10	37	----
PB-11 @ 12'	B-11	10/11/2005	0.298	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0050	0.293	ND < 0.0050	0.0416	ND < 0.0050	0.0672	ND < 10	ND < 10	----
PB-12 @ 4'	B-12	10/11/2005	0.0733	ND < 0.0050	0.0071	0.0085	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0500	ND < 10	ND < 10	----
PB-12 @ 8'	B-12	10/11/2005	4,430	25.9	462	564	98.3	122	ND < 12.5	19.6	ND < 12.5	ND < 125	ND < 10	ND < 10	----
PB-12 @ 12'	B-12	10/11/2005	3,290	17.7	325	413	71.9	84.3	ND < 12.5	13.5	ND < 12.5	ND < 125	ND < 10	ND < 10	----
PB-13 @ 4'	B-13	10/11/2005	0.163	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0500	ND < 10	ND < 10	----
PB-13 @ 8'	B-13	10/11/2005	2,490	14.3	259	320	56.2	67.4	ND < 10.0	11.1	ND < 10.0	ND < 100	ND < 10	ND < 10	----
PB-13 @ 11'	B-13	10/11/2005	4,490	25.6	449	559	97.5	123	ND < 12.5	19.2	ND < 12.5	ND < 125	ND < 10	ND < 10	----
PB-14 @ 4'	B-14	10/11/2005	4,740	26.9	482	610	106	128	ND < 12.5	20.3	ND < 12.5	ND < 125	ND < 10	ND < 10	----
PB-14 @ 8'	B-14	10/11/2005	4,070	24.1	433	536	93.2	114	ND < 12.5	17.9	ND < 12.5	ND < 125	ND < 10	ND < 10	----
PB-14 @ 12'	B-14	10/11/2005	2,890	17.7	321	390	68.5	81.8	ND < 6.25	13.8	ND < 6.25	ND < 62.5	ND < 10	ND < 10	----
PB-15 @ 4'	B-15	10/11/2005	0.229	ND < 0.0050	0.0078	0.0118	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0500	ND < 10	ND < 10	----
PB-15 @ 8'	B-15	10/11/2005	1,210	7.49	133	163	28.6	39.2	ND < 5.00	5.97	ND < 5.00	ND < 50.0	ND < 10	ND < 10	----
PB-15 @ 11'	B-15	10/11/2005	0.0905	ND < 0.0050	ND < 0.0050	0.0075	ND < 0.0050	0.0171	ND < 0.0050	ND < 0.0050	ND < 0.0050	0.0526	ND < 10	ND < 10	----
PB-16 @ 4'	B-16	10/11/2005	3,960	23.2	416	527	92.4	116	ND < 12.5	18.7	ND < 12.5	ND < 125	ND < 10	ND < 10	----
PB-16 @ 8'	B-16	10/11/2005	2,530	14.6	260	326	56.5	70.1	ND < 10.0	11.3	ND < 10.0	ND < 100	ND < 10	ND < 10	----
PB-16 @ 12'	B-16	10/11/2005	0.260	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0050	0.0678	ND < 0.0050	0.0119	ND < 0.0050	ND < 0.0500	ND < 10	ND < 10	----
TR-2	Soil Stockpile	11/9/2005	1,800	5.5	140	176	25	390	----	----	----	----	----	----	----
TR-4	Soil Stockpile	11/9/2005	11,000	28	840	1,140	220	520	----	----	----	----	----	----	----
TR-6	Soil Stockpile	11/9/2005	7,700	21	560	780	140	250	----	----	----	----	----	----	----
TR-8	Soil Stockpile	11/9/2005	4,900	7.1	250	470	77	140	----	----	----	----	----	----	----
TR-10	Soil Stockpile	11/9/2005	8,700	23	640	890	160	380	----	----	----	----	----	----	----
TR-12	Soil Stockpile	11/9/2005	8,200	19	540	810	140	280	----	----	----	----	----	----	----
SW-1 @ 5'	Excavation	11/11/2005	ND < 1.0	ND < 0.0050	0.26	ND < 0.0150	ND < 0.0050	ND < 0.025	ND < 0.020	ND < 0.020	ND < 0.020	ND < 0.50	ND < 1.0	ND < 10	----
SW-2 @ 5'	Excavation	11/11/2005	ND < 1.0	ND < 0.0050	ND < 0.013	ND < 0.0150	ND < 0.0050	ND < 0.025	ND < 0.020	ND < 0.020	ND < 0.020	ND < 0.50	ND < 1.0	ND < 10	----
SW-3 @ 5'	Excavation	11/11/2005	ND < 1.0	ND < 0.0050	0.32	ND < 0.0150	ND < 0.0050	ND < 0.025	ND < 0.020	ND < 0.020	ND < 0.020	ND < 0.50	ND < 1.0	ND < 10	----
SW-4 @ 5'	Excavation	11/11/2005	ND < 1.0	ND < 0.0050	0.33	ND < 0.0150	ND < 0.0050	ND < 0.025	ND < 0.020	ND < 0.020	ND < 0.020	ND < 0.50	ND < 1.0	ND < 10	----
SW-5 @ 5'	Excavation	11/11/2005	ND < 1.0	ND < 0.0050	0.072	ND < 0.0150	ND < 0.0050	ND < 0.025	ND < 0.020	ND < 0.020	ND < 0.020	ND < 0.50	1.7	13	----
SW-6 @ 5'	Excavation	11/11/2005	1.8	ND < 0.0050	0.39	ND < 0.0150	0.0052	ND < 0.025	ND < 0.020	ND < 0.020	ND < 0.020	ND < 0.50	1.3	14	----
SW-7 @ 5'	Excavation	11/11/2005	ND < 1.0	ND < 0.0050	0.37	ND < 0.0150	ND < 0.0050	ND < 0.025	ND < 0.020	ND < 0.020	ND < 0.020	ND < 0.50	ND < 1.0	ND < 10	----
PB-1 @ 10'	Excavation	11/11/2005	ND < 1.0	ND < 0.0050	ND < 0.013	ND < 0.0150	ND < 0.0050	ND < 0.025	ND < 0.020	ND < 0.020	ND < 0.020	ND < 0.50	ND < 1.0	ND < 10	----

Notes:

TPHg: Total petroleum hydrocarbons as gasoline.

MTBE: Methyl tertiary butyl ether

DIPE: Diisopropyl ether

TAME: Tertiary amyl methyl ether

ETBE: Ethyl tertiary butyl ether

TBA: Tertiary butanol

TPHd: Total petroleum hydrocarbons as diesel.

TPHmo: Total petroleum hydrocarbons as motor oil.

ppm: parts per million = µg/g = mg/kg = 1000 µg/kg

ND: Not detected. Sample was not detected at or above the method detection limit as shown.

**Table 2**  
**Groundwater Analytical Results from Boreholes**  
 Glendale 76  
 1497 Glendale Road  
 Arcata, California 95521

Sample ID	Sample Location	Sample Date	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Xylenes (ppb)	Ethylbenzene (ppb)	MTBE (ppb)	DIPE (ppb)	TAME (ppb)	ETBE (ppb)	TBA (ppb)	TPHd (ppb)	TPHmo (ppb)
SB-1-GW	SB-1	1/13/1998	210	27	8.3	6	1.3	100	----	----	----	----	50	----
SB-2-GW	SB-2	1/13/1998	290	1.4	ND < 0.5	ND < 0.5	ND < 0.5	590	----	----	----	----	100	----
SB-3-GW	SB-3	1/13/1998	79,000	1,400	4,300	21,000	4,600	20,000	----	----	----	----	ND < 200	----
SB-4-GW	SB-4	1/13/1998	1,400	11	20	40	8	2,000	----	----	----	----	ND < 50	----
SBGW-8 @ 16'	B-8	4/25/2002	ND < 50	ND < 0.3	ND < 0.3	ND < 0.6	ND < 0.3	42.9	ND < 0.5	8.6	ND < 0.5	ND < 100	----	----
SBGW-9 @ 16'	B-9	4/24/2002	152	1.9	ND < 0.3	ND < 0.6	ND < 0.3	50	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50	----	----
SBGW-10 @ 16'	B-10	4/25/2002	150,000	13,700	43,400	10,600	2,100	198,000	ND < 50	33,300	ND < 50	ND < 1,000	----	----
SBGW-11 @ 16'	B-11	4/24/2002	20,700	2,090	7.4	171	9.9	29,000	ND < 0.5	6,710	ND < 0.5	ND < 50	----	----
SBGW-12 @ 16'	B-12	4/25/2002	978	10.1	0.4	1.8	ND < 0.3	1,470	ND < 0.5	169	ND < 0.5	ND < 100	----	----
PB-11 @ 14.6'	B-11	10/11/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	21.2	ND < 0.5	3.4	ND < 0.5	ND < 50.0	105	92
PB-18 @ 14.8'	B-18	10/11/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	5.7	ND < 0.5	1.0	ND < 0.5	ND < 50.0	ND < 59	79

Notes:

TPHg: Total petroleum hydrocarbons as gasoline.

MTBE: Methyl tertiary butyl ether

DIPE: Diisopropyl ether

TAME: Tertiary amyl methyl ether

ETBE: Ethyl tertiary butyl ether

TPHmo: Total petroleum hydrocarbons as motor oil.

TBA: Tertiary butanol

TPHd: Total petroleum hydrocarbons as diesel.

ppb: parts per billion = µg/l = .001 mg/l = 0.001 ppm.

ND: Not detected. Sample was detected below the method detection limit as shown.

**Table 3**  
**Water Levels**  
 Glendale 76  
 1497 Glendale Road  
 Arcata, California 95521

Sample Location	Date	Depth to Bottom/ Feet BTOC	Survey Height/ Feet AMSL	Depth to Water/ Feet BTOC	Adjusted Elevation/ Feet AMSL	Thickness of Floating Product/ Feet
MW-1	5/3/2002	19.08	96.47	12.25	84.22	0.00
	6/10/2002	19.22	96.47	13.91	82.56	0.00
	7/12/2002	19.40	96.47	15.58	80.89	0.00
	8/17/2002	18.99	96.47	16.45	80.02	0.00
	9/11/2002	18.97	96.47	16.71	79.76	0.00
	10/11/2002	18.98	96.47	16.92	79.55	0.00
	11/15/2002	18.99	96.47	16.76	79.71	0.00
	12/16/2002	19.29	96.47	14.94	81.53	0.00
	1/12/2003	18.99	96.47	8.74	87.73	0.00
	2/14/2003	18.99	96.47	10.90	85.57	0.00
	3/17/2003	19.29	96.47	11.17	85.30	0.00
	4/12/2003	18.99	96.47	8.89	87.58	0.00
	7/14/2003	19.17	96.47	15.09	81.38	0.00
	10/21/2003	19.17	96.47	17.02	79.45	0.00
	1/16/2004	19.17	96.47	9.44	87.03	0.00
	4/23/2004	19.17	96.47	12.02	84.45	0.00
	7/31/2004	19.18	96.47	15.15	81.32	0.00
	10/30/2004	18.90	96.47	14.51	81.96	0.00
	1/23/2005	19.19	96.47	10.33	86.14	0.00
	4/30/2005	19.19	96.47	10.94	85.53	0.00
	7/26/2005	19.08	96.47	13.32	83.15	0.00
	10/31/2005	19.19	96.47	13.91	82.56	0.00
	2/14/2006	19.20	96.47	9.58	86.89	0.00
MW-2	5/3/2002	19.15	96.45	12.65	83.80	0.00
	6/10/2002	19.02	96.45	14.30	82.15	0.00
	7/12/2002	19.00	96.45	15.95	80.50	0.00
	8/17/2002	18.86	96.45	16.50	79.95	0.00
	9/11/2002	18.90	96.45	16.79	79.66	0.00
	10/11/2002	18.84	96.45	17.01	79.44	0.00
	11/15/2002	18.87	96.45	16.86	79.59	0.00
	12/16/2002	19.14	96.45	15.35	81.10	0.00
	1/12/2003	18.89	96.45	9.16	87.29	0.00
	2/14/2003	18.91	96.45	11.12	85.33	0.00
	3/17/2003	19.14	96.45	11.47	84.98	0.00
	4/12/2003	18.89	96.45	9.24	87.21	0.00
	7/14/2003	19.04	96.45	15.26	81.19	0.00
	10/21/2003	19.04	96.45	17.10	79.35	0.00
	1/16/2004	19.04	96.45	9.78	86.67	0.00
	4/23/2004	19.04	96.45	12.31	84.14	0.00
	7/31/2004	18.99	96.45	15.29	81.16	0.00
	10/30/2004	18.60	96.45	14.71	81.74	0.00
	1/23/2005	18.90	96.45	10.62	85.83	0.00
	4/30/2005	18.70	96.45	11.16	85.29	0.00
	7/26/2005	19.81	96.45	13.44	83.01	0.00
	10/31/2005	18.89	96.45	14.01	82.44	0.00
	2/14/2006	18.90	96.45	9.91	86.54	0.00

**Table 3 (cont.)**  
**Water Levels**  
 Glendale 76  
 1497 Glendale Road  
 Arcata, California 95521

Sample Location	Date	Depth to Bottom/ Feet BTOC	Survey Height/ Feet AMSL	Depth to Water/ Feet BTOC	Adjusted Elevation/ Feet AMSL	Thickness of Floating Product/ Feet
MW-3	5/3/2002	19.22	96.08	12.20	83.88	0.00
	6/10/2002	19.20	96.08	13.70	82.38	0.00
	7/12/2002	19.21	96.08	15.20	80.88	0.00
	8/17/2002	19.04	96.08	16.04	80.04	0.00
	9/11/2002	19.10	96.08	16.28	79.80	0.00
	10/11/2002	19.02	96.08	16.48	79.60	0.00
	11/15/2002	19.20	96.08	16.40	79.68	0.00
	12/16/2002	19.45	96.08	11.59	84.49	0.00
	1/12/2003	19.17	96.08	8.46	87.62	0.00
	2/14/2003	19.17	96.08	10.81	85.27	0.00
	3/17/2003	19.45	96.08	10.98	85.10	0.00
	4/12/2003	19.17	96.08	8.64	87.44	0.00
	7/14/2003	19.37	96.08	14.76	81.32	0.00
	10/21/2003	19.37	96.08	16.61	79.47	0.00
	1/16/2004	19.37	96.08	9.21	86.87	0.00
	4/23/2004	19.37	96.08	11.74	84.34	0.00
	7/31/2004	19.44	96.08	14.72	81.36	0.00
	10/30/2004	19.13	96.08	14.21	81.87	0.00
	1/23/2005	19.43	96.08	10.18	85.90	0.00
	4/30/2005	19.35	96.08	10.70	85.38	0.00
	7/26/2005	19.29	96.08	12.93	83.15	0.00
	10/31/2005	19.35	96.08	13.47	82.61	0.00
	2/14/2006	19.42	96.08	9.49	86.59	0.00
MW-4	5/3/2002	19.15	96.27	11.84	84.43	0.00
	6/10/2002	19.13	96.27	13.46	82.81	0.00
	7/12/2002	19.10	96.27	15.08	81.19	0.00
	8/17/2002	19.00	96.27	16.04	80.23	0.00
	9/11/2002	19.00	96.27	16.33	79.94	0.00
	10/11/2002	19.00	96.27	16.50	79.77	0.00
	11/15/2002	19.12	96.27	16.41	79.86	0.00
	12/16/2002	19.30	96.27	13.25	83.02	0.00
	1/12/2003	19.07	96.27	8.21	88.06	0.00
	2/14/2003	19.11	96.27	10.53	85.74	0.00
	3/17/2003	13.25	96.27	10.64	85.63	0.00
	4/12/2003	19.07	96.27	8.37	87.90	0.00
	7/14/2003	19.27	96.27	14.69	81.58	0.00
	10/21/2003	19.27	96.27	16.67	79.60	0.00
	1/16/2004	19.27	96.27	8.95	87.32	0.00
	4/23/2004	19.27	96.27	11.51	84.76	0.00
	7/31/2004	19.36	96.27	14.70	81.57	0.00
	10/30/2004	19.07	96.27	14.15	82.12	0.00
	1/23/2005	19.35	96.27	9.97	86.30	0.00
	4/30/2005	19.28	96.27	10.60	85.67	0.00
	7/26/2005	19.31	96.27	12.94	83.33	0.00
	10/31/2005	19.33	96.27	13.51	82.76	0.00

Notes:

BTOC: Below Top of Casing

AMSL: Above Mean Sea Level

**Table 4**  
**Groundwater Analytical Results from Monitoring Wells**  
 Glendale 76  
 1497 Glendale Road  
 Arcata, California 95521

Sample Location	Sample Event	Annual Quarter	Sample Date	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Xylenes (ppb)	Ethylbenzene (ppb)	MTBE (ppb)	DIPE (ppb)	TAME (ppb)	ETBE (ppb)	TBA (ppb)	TPHd (ppb)	TPHmo (ppb)
MW-1	Well Installation	Second Quarter	5/3/2002	<b>8,605</b>	<b>2.9</b>	ND < 0.3	ND < 0.6	ND < 0.3	<b>3,270</b>	ND < 0.5	<b>559</b>	ND < 0.5	ND < 100	NT	NT
	First Quarterly	Third Quarter	7/12/2002	<b>345</b>	<b>0.9</b>	ND < 0.3	ND < 0.6	ND < 0.3	<b>257</b>	ND < 0.5	<b>53.4</b>	ND < 0.5	ND < 100	NT	NT
	Second Quarterly	Fourth Quarter	10/11/2002	ND < 1,000	ND < 6.0	ND < 6.0	ND < 12.0	ND < 6.0	<b>200</b>	ND < 10	<b>38.6</b>	ND < 10	ND < 2,000	ND < 50	ND < 50
	Third Quarterly	First Quarter	1/12/2003	<b>5,900</b>	<b>18</b>	<b>0.7</b>	<b>92</b>	<b>1.0</b>	<b>1,100</b>	ND < 0.5	<b>160</b>	ND < 0.5	<b>120</b>	<b>240</b>	ND < 500
	Fourth Quarterly	Second Quarter	4/12/2003	<b>420</b>	<b>8.7</b>	ND < 0.5	<b>10</b>	<b>0.9</b>	<b>1,000</b>	ND < 0.5	<b>130</b>	ND < 0.5	<b>130</b>	ND < 50	ND < 500
	Fifth Quarterly	Third Quarter	7/14/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	<b>79</b>	ND < 0.5	<b>15</b>	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Sixth Quarterly	Fourth Quarter	10/21/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	<b>20</b>	ND < 0.5	<b>4.0</b>	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Seventh Quarterly	First Quarter	1/16/2004	<b>190</b>	<b>3.6</b>	ND < 0.5	<b>12</b>	<b>1.4</b>	<b>450</b>	ND < 0.5	<b>71</b>	ND < 0.5	<b>21</b>	ND < 50	ND < 500
	Eighth Quarterly	Second Quarter	4/23/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	<b>31</b>	ND < 0.5	<b>7.6</b>	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Ninth Quarterly	Third Quarter	7/31/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	<b>19</b>	ND < 0.5	<b>3.9</b>	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Tenth Quarterly	Fourth Quarter	10/30/2004	ND < 50	ND < 0.5	<b>1.1</b>	ND < 1.0	ND < 0.5	<b>18</b>	ND < 0.5	<b>4.3</b>	ND < 0.5	ND < 5.0	<b>92</b>	ND < 500
	Eleventh Quarterly	First Quarter	1/23/2005	<b>359</b>	<b>2.7</b>	ND < 2.5	ND < 5.0	ND < 2.5	<b>315</b>	ND < 2.5	<b>55.6</b>	ND < 25.0	ND < 250	<b>110</b>	<b>58</b>
	Twelve Quarterly	Second Quarter	4/30/2005	<b>389</b>	ND < 2.0	ND < 2.0	ND < 4.0	ND < 2.0	<b>277</b>	----	----	----	----	<b>68</b>	<b>77</b>
	Thirteenth Quarterly	Third Quarter	7/26/2005	ND < 60	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	<b>37.9</b>	----	----	----	----	ND < 50	<b>146</b>
	Fourteenth Quarterly	Fourth Quarter	10/31/2005	ND < 60	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	<b>19.2</b>	----	----	----	----	ND < 50	<b>121</b>
	Fifteenth Quarterly	First Quarter	2/14/2006	<b>641</b>	<b>25.4</b>	<b>128</b>	<b>117</b>	<b>28.7</b>	<b>29.2</b>	----	----	----	----	ND < 56	ND < 56
MW-2	Well Installation	Second Quarter	5/3/2002	<b>1,860</b>	<b>28.8</b>	<b>0.9</b>	<b>1.4</b>	<b>0.6</b>	<b>1,060</b>	ND < 0.5	<b>204</b>	ND < 0.5	ND < 100	NT	NT
	First Quarterly	Third Quarter	7/12/2002	<b>684</b>	<b>10.5</b>	ND < 0.3	<b>3.8</b>	ND < 0.3	<b>422</b>	ND < 0.5	<b>100</b>	ND < 0.5	ND < 100	NT	NT
	Second Quarterly	Fourth Quarter	10/11/2002	ND < 1,000	ND < 6.0	ND < 6.0	ND < 12.0	ND < 6.0	<b>144</b>	ND < 10	<b>27.0</b>	ND < 10	ND < 2,000	ND < 50	ND < 50
	Third Quarterly	First Quarter	1/12/2003	<b>490</b>	<b>35</b>	ND < 0.5	<b>10.7</b>	ND < 0.5	<b>640</b>	ND < 0.5	<b>110</b>	ND < 0.5	<b>79</b>	<b>60</b>	ND < 500
	Fourth Quarterly	Second Quarter	4/12/2003	<b>180</b>	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	<b>240</b>	ND < 0.5	<b>49</b>	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Fifth Quarterly	Third Quarter	7/14/2003	<b>170</b>	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	<b>310</b>	ND < 0.5	<b>59</b>	ND < 0.5	<b>59</b>	ND < 50	ND < 500
	Sixth Quarterly	Fourth Quarter	10/21/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	<b>16</b>	ND < 0.5	<b>3.0</b>	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Seventh Quarterly	First Quarter	1/16/2004	<b>120</b>	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	<b>160</b>	ND < 0.5	<b>30</b>	ND < 0.5	<b>18</b>	ND < 50	ND < 500
	Eighth Quarterly	Second Quarter	4/23/2004	ND < 500	ND < 5.0	ND < 5.0	ND < 10.0	ND < 5.0	<b>180</b>	ND < 5.0	<b>40</b>	ND < 5.0	ND < 50	ND < 50	ND < 500
	Ninth Quarterly	Third Quarter	7/31/2004	<b>73</b>	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	<b>86</b>	ND < 0.5	<b>19</b>	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Tenth Quarterly	Fourth Quarter	10/30/2004	<b>71</b>	ND < 0.5	<b>0.7</b>	ND < 1.0	ND < 0.5	<b>50</b>	ND < 0.5	<b>10</b>	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Eleventh Quarterly	First Quarter	1/23/2005	<b>122</b>	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	<b>102</b>	ND < 0.5	<b>24.2</b>	ND < 5.0	ND < 50.0	ND < 50	<b>81</b>
	Twelve Quarterly	Second Quarter	4/30/2005	ND < 60	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	<b>54.7</b>	----	----	----	----	ND < 50	<b>100</b>
	Thirteenth Quarterly	Third Quarter	7/26/2005	<b>78.7</b>	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	<b>68.5</b>	----	----	----	----	<b>58</b>	<b>168</b>
	Fourteenth Quarterly	Fourth Quarter	10/31/2005	ND < 60	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	<b>32.3</b>	----	----	----	----	ND < 50	<b>115</b>
	Fifteenth Quarterly	First Quarter	2/14/2006	ND < 50.0	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	<b>36.0</b>	----	----	----	----	ND < 50	<b>116</b>

**Table 4 (cont.)**  
**Groundwater Analytical Results from Monitoring Wells**  
 Glendale 76  
 1497 Glendale Road  
 Arcata, California 95521

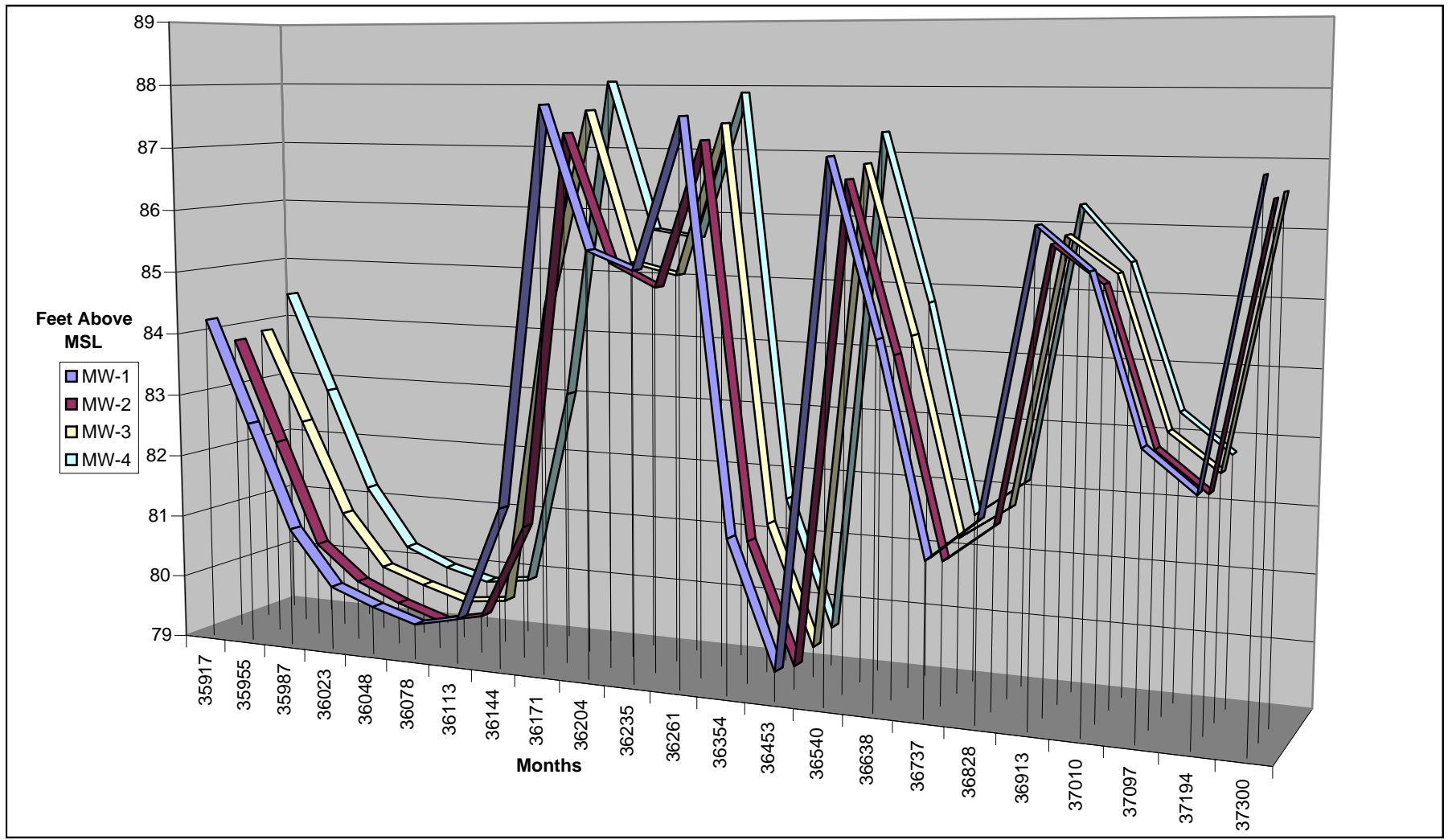
Sample Location	Sample Event	Annual Quarter	Sample Date	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Xylenes (ppb)	Ethylbenzene (ppb)	MTBE (ppb)	DIPE (ppb)	TAME (ppb)	ETBE (ppb)	TBA (ppb)	TPHd (ppb)	TPHmo (ppb)
MW-3	Well Installation	Second Quarter	5/3/2002	8,900	387	378	743	352	1,080	ND < 0.5	37.2	ND < 0.5	ND < 100	NT	NT
	First Quarterly	Third Quarter	7/12/2002	5,720	376	94.3	258	230	1,240	ND < 5.0	285	ND < 5.0	ND < 1,000	NT	NT
	Second Quarterly	Fourth Quarter	10/11/2002	ND < 5,000	318	ND < 30.0	ND < 60.0	ND < 30.0	1,270	ND < 100	369	ND < 100	ND < 10,000	381	ND < 50
	Third Quarterly	First Quarter	1/12/2003	1,100	19	62	48	18	38	ND < 0.5	8.8	ND < 0.5	ND < 5.0	110	ND < 500
	Fourth Quarterly	Second Quarter	4/12/2003	300	21	45	30.4	14	34	ND < 0.5	9.2	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Fifth Quarterly	Third Quarter	7/14/2003	2,000	170	11	44	58	330	ND < 5.0	97	ND < 5.0	ND < 50	210	ND < 500
	Sixth Quarterly	Fourth Quarter	10/21/2003	690	42	ND < 5.0	ND < 10.0	ND < 5.0	230	ND < 5.0	58	ND < 5.0	ND < 50	74	ND < 500
	Seventh Quarterly	First Quarter	1/16/2004	150	5.2	12	9.2	5.9	6.6	ND < 0.5	2.1	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Eighth Quarterly	Second Quarter	4/23/2004	ND < 50	0.5	ND < 0.5	0.7	0.7	1.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Ninth Quarterly	Third Quarter	7/31/2004	700	7.6	ND < 0.5	ND < 1.0	2.4	110	ND < 0.5	35	ND < 0.5	42	110	ND < 500
	Tenth Quarterly	Fourth Quarter	1/27/2005	1,000	14	9.8	14	8.8	23	ND < 0.5	6.9	ND < 0.5	ND < 5.0	130	ND < 500
	Eleventh Quarterly	First Quarter	1/23/2005	498	102	7.2	68.9	3.4	90.6	ND < 0.5	19.5	ND < 5.0	ND < 50.0	ND < 50	ND < 50
	Twelve Quarterly	Second Quarter	4/30/2005	7,030	14.6	635	1,890	306	21.0	----	----	----	----	ND < 50	52
	Thirteenth Quarterly	Third Quarter	7/26/2005	88.9	12.4	ND < 0.5	ND < 1.0	ND < 0.5	33.6	----	----	----	----	ND < 50	60
	Fourteenth Quarterly	Fourth Quarter	10/31/2005	247	1.3	ND < 0.5	ND < 1.0	ND < 0.5	52.0	----	----	----	----	ND < 50	73
	Fifteenth Quarterly	First Quarter	2/14/2006	ND < 50.0	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	14.1	----	----	----	----	55	93
MW-4	Well Installation	Second Quarter	5/3/2002	3,150	138	40	124	49.5	1,050	ND < 0.5	131	ND < 0.5	NT	NT	NT
	First Quarterly	Third Quarter	7/12/2002	2,850	256	17.5	181	167	1,820	ND < 0.5	241	ND < 0.5	ND < 100	NT	NT
	Second Quarterly	Fourth Quarter	10/11/2002	1,520	117	ND < 0.3	111	66.7	732	ND < 5.0	115	ND < 5.0	ND < 1,000	ND < 50	ND < 50
	Third Quarterly	First Quarter	1/12/2003	16,000	220	170	1,900	340	1,500	ND < 50	160	ND < 50	ND < 500	3,000	ND < 500
	Fourth Quarterly	Second Quarter	4/12/2003	ND < 1,000	210	180	1,320	430	1,100	ND < 50	130	ND < 50	ND < 500	3,800	ND < 500
	Fifth Quarterly	Third Quarter	7/14/2003	770	33	ND < 5.0	17	20	180	ND < 5.0	29	ND < 5.0	ND < 50	63	ND < 500
	Sixth Quarterly	Fourth Quarter	10/21/2003	970	80	ND < 5.0	7.8	21	540	ND < 5.0	85	ND < 5.0	ND < 50	260	ND < 500
	Seventh Quarterly	First Quarter	1/16/2004	4,200	90	29	710	220	550	ND < 5.0	73	ND < 5.0	420	ND < 50	ND < 500
	Eighth Quarterly	Second Quarter	4/23/2004	1,300	26	ND < 5.0	79	34	170	ND < 5.0	27	ND < 5.0	170	150	ND < 500
	Ninth Quarterly	Third Quarter	7/31/2004	78	2.9	ND < 0.5	ND < 1	1.1	12	ND < 0.5	1.9	ND < 0.5	ND < 5.0	ND < 50	ND < 500
	Tenth Quarterly	Fourth Quarter	10/30/2004	8,800	230	32	1,600	650	940	ND < 5.0	200	ND < 5.0	640	1,500	ND < 500
	Eleventh Quarterly	First Quarter	1/23/2005	872	24.2	2.3	109	57.0	312.0	ND < 1.2	30.6	ND < 12.5	198	585	52
	Twelve Quarterly	Second Quarter	4/30/2005	1,280	17.8	20.0	92.4	49.3	133	ND < 1.0	14.5	ND < 1.0	131	401	92
	Thirteenth Quarterly	Third Quarter	7/26/2005	391	4.4	ND < 0.5	5.2	3.1	49.6	ND < 0.5	6.1	ND < 0.5	ND < 50	347	71
	Fourteenth Quarterly	Fourth Quarter	10/31/2005	96.9	1.0	ND < 0.5	ND < 1.0	ND < 0.5	25.2	ND < 0.5	3.2	ND < 0.5	ND < 50	56	80

Notes:

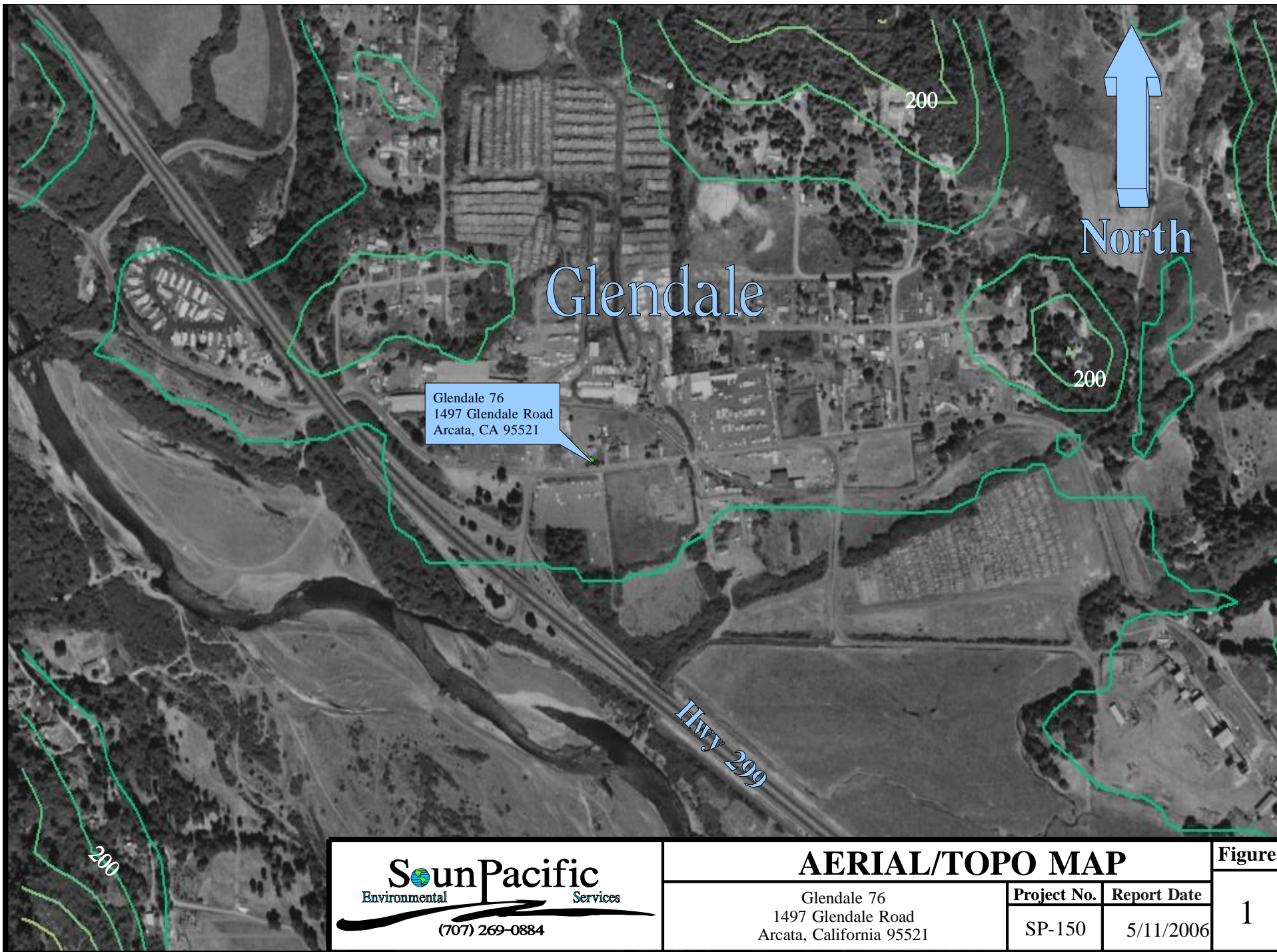
TPHg: Total Petroleum Hydrocarbons as gasoline  
 MTBE: Methyl tertiary butyl ether  
 DIPE: Diisopropyl Ether  
 TAME: Tertiary amyl methyl ether  
 ETBE: Ethyl tertiary butyl ether


TBA: Tertiary butanol  
 TPHd: Total Petroleum Hydrocarbons as diesel  
 TPHmo: Total petroleum hydrocarbons as motor oil  
 ppb: parts per billion = µg/l = .001 mg/l = 0.001 ppm  
 ND: Not detected. Sample was detected at or below the method detection limit as shown.

**Chart 1**  
**Monthly Hydrograph**  
Glendale 76  
1497 Glendale Road  
Arcata, California



# Figures



 <p><b>Soun Pacific</b> Environmental Services (707) 269-0884</p>	<b>AERIAL/TOPO MAP</b>			<b>Figure</b>
	Glendale 76 1497 Glendale Road Arcata, California 95521	<b>Project No.</b>	<b>Report Date</b>	<b>1</b>
		SP-150	5/11/2006	



	Asphalt Surface
	Cement Surface
	Gravel/Dirt Surface
	Vegetation
	Above Ground Utility Pole
	Water Spicket
	Underground Water Line
	Above Ground Electric Line
	Above Ground Phone Line
	Telephone
	Monitoring Well
	Destroyed Monitoring Well

The site map shows the layout of the former Shell Chemical Company site. Key features include:

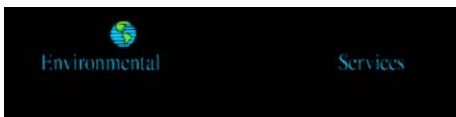
- Buildings:** A large **STORAGE BUILDING** at the top, a **MINI-MART** in the center, and another **STORAGE BUILDING** on the right.
- Monitoring Wells:** Four monitoring wells are marked: **MW-1** (solid blue circle), **MW-2** (solid blue circle), **MW-3** (solid blue circle), and **MW-4** (open circle).
- Utility Lines:** A network of lines is shown, including an **Underground Water Line** (dashed line with 'W'), **Above Ground Electric Line** (dashed line with 'E'), and **Above Ground Phone Line** (dashed line with 'P'). A **Telephone** (T) is also indicated.
- Other Features:** A **Fence** runs along the top and right sides. A **Canopy (11'4" Clearance)** is located near the Mini-Mart. **Previous Pump Island** and **Previous Product Lines** are shown as dashed outlines. **(4) Previous 4,000-Gallon USTs** are located near the Mini-Mart.
- Scale and Orientation:** A scale bar indicates distances of 0, 30, and 60 feet. A north arrow is located in the bottom right corner, pointing towards the top right.

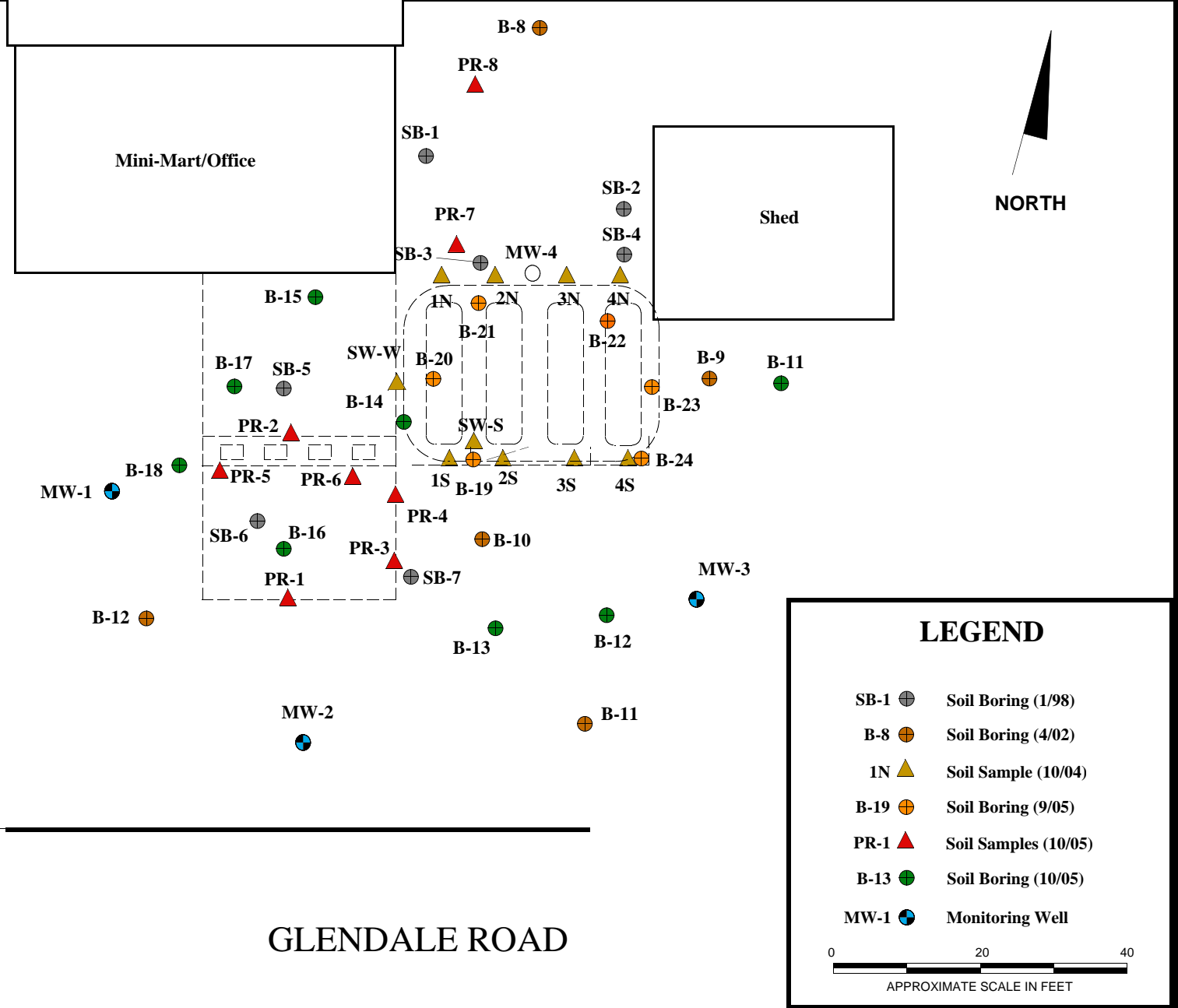
# SITE PLAN

5/11/06

Figure

2





# SAMPLE LOCATION MAP

Glendale 76  
1497 Glendale Road  
Arcata, California 95521

Project No.  
SP-150

Report Date  
5/11/06

Figure

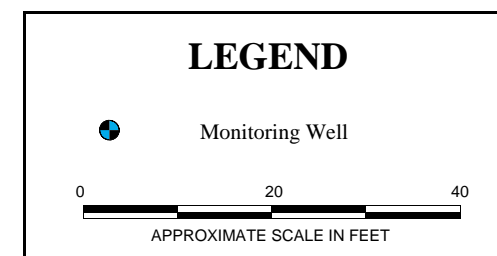
3

NORTH

MW-1	
Casing Elevation:	96.47
Depth to Water:	9.58
Elevation above MSL:	86.89

MW-2	
Casing Elevation:	96.45
Depth to Water:	9.91
Elevation above MSL:	86.54

MW-3	
Casing Elevation:	96.08
Depth to Water:	9.49
Elevation above MSL:	86.59



**GW Flow Direction: SSE**  
**GW Gradient: 0.009 ft/ft**

GLENDALE ROAD



# **GROUNDWATER LEVEL CONTOUR MAP** **FEBRUARY 2006**

Glendale 76  
 1497 Glendale Road  
 Arcata, California 95521

Project No.  
 SP-150

Report Date  
 3/25/06

Figure

4

NORTH

## LEGEND



Monitoring Well

Results not shown were detected  
below laboratory detection limits

0 30 60

APPROXIMATE SCALE IN FEET

### Groundwater Results MW-1

TPHg	641	ppb
BTXE	299.1	ppb
MTBE	29.2	ppb

### Groundwater Results MW-3

MTBE	14.1	ppb
TPHd	55	ppb
TPHmo	93	ppb

### Groundwater Results MW-2

MTBE	36.0	ppb
TPHmo	116	ppb

GLENDALE ROAD

## GROUNDWATER ANALYTICAL RESULTS

Figure

Glendale 76  
1497 Glendale Road  
Arcata, California 95521

Project No.

SP-150

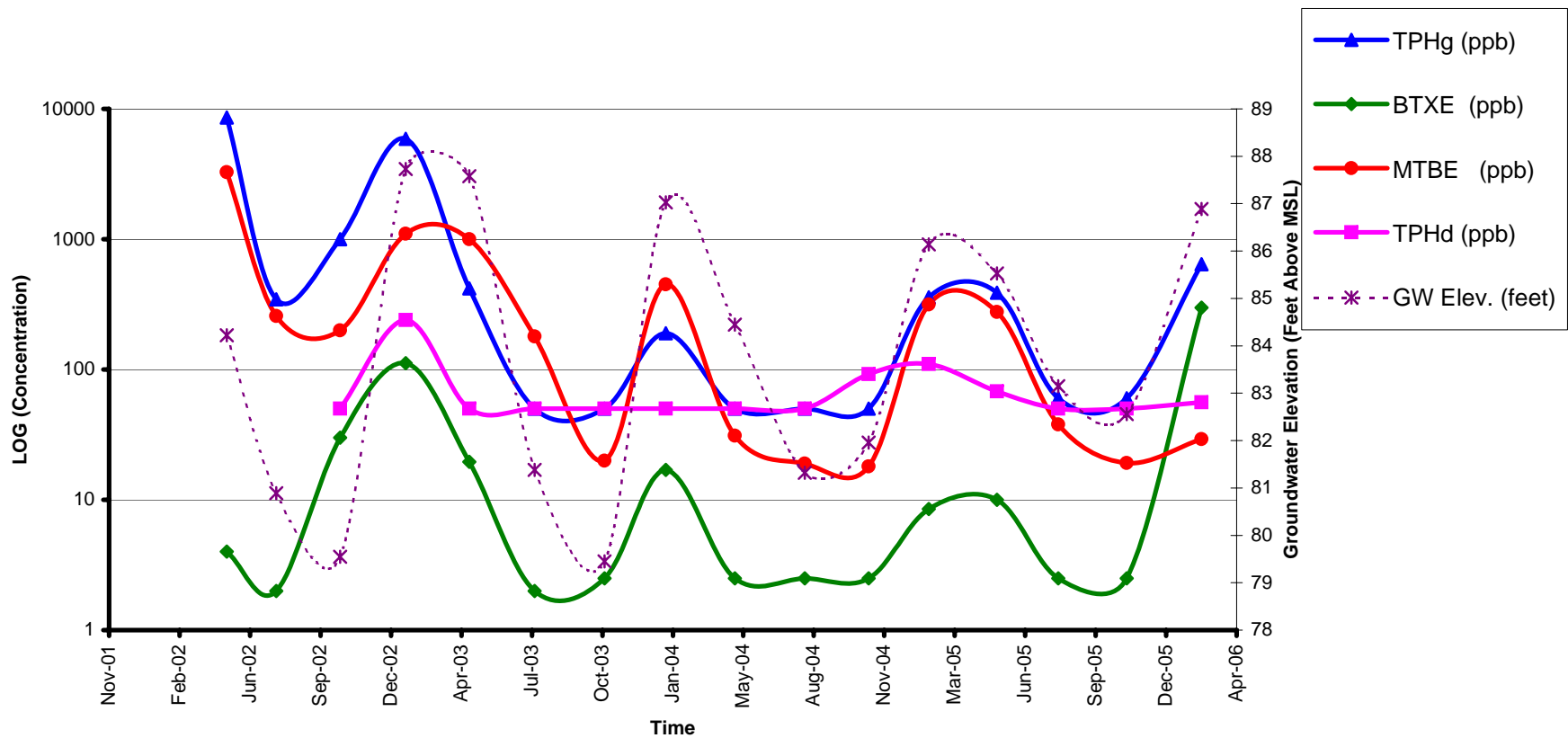
Report Date

5/11/06

5

Environmental

Services



### MW-1 HYDROCARBON CONCENTRATIONS VS. TIME

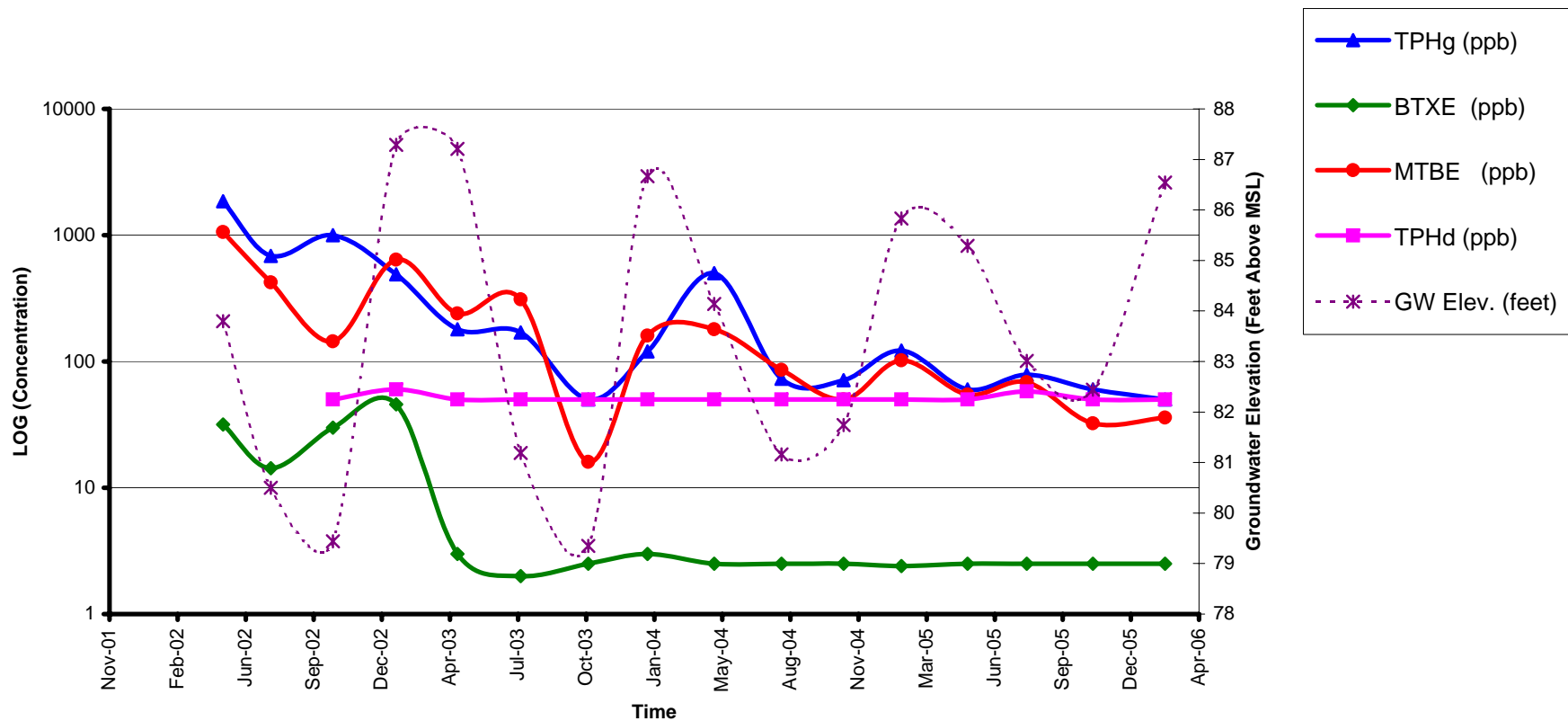
Glendale 76  
1497 Glendale Road  
Arcata, California 95521

Project No.  
SP-150

Date  
5/11/2006

Figure

6



## MW-2 HYDROCARBON CONCENTRATIONS VS. TIME

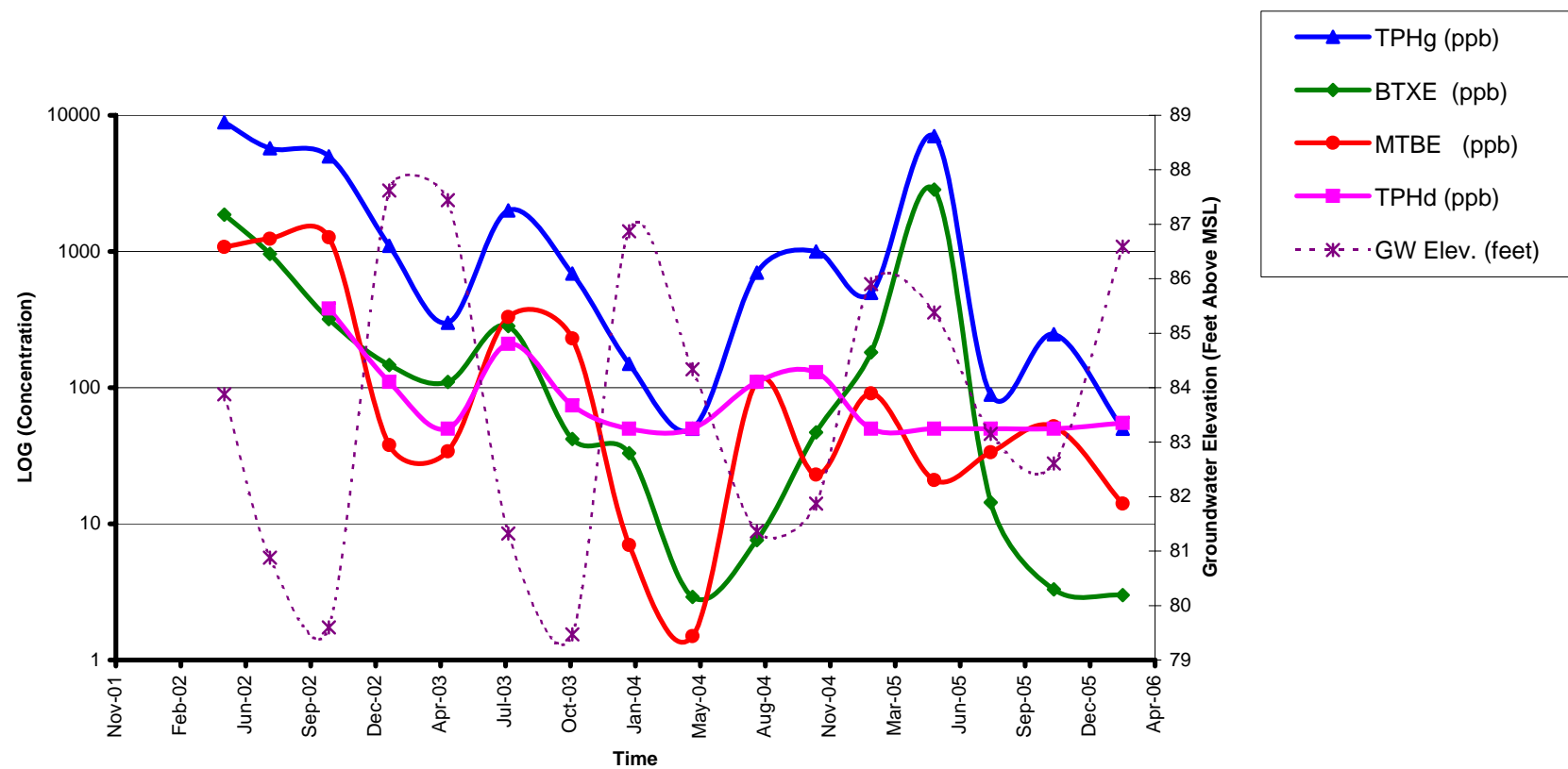
Glendale 76  
1497 Glendale Road  
Arcata, California 95521

Project No.  
SP-150

Date  
5/11/2005

Figure

7



### MW-3 HYDROCARBON CONCENTRATIONS VS. TIME

Glendale 76  
 1497 Glendale Road  
 Arcata, California 95521

Project No.

SP-150

Date

5/11/2006

Figure

8

# Appendices

# Appendix A



www.basiclab.com

voice 530.243.7234 2218 Railroad Avenue  
fax 530.243.7494 Redding, California 96001

March 03, 2006

**Lab ID: 6020583**

Andy Malone  
SOUNPACIFIC  
4612 GREENWOOD HEIGHTS DR  
KNEELAND, CA 95549  
RE: GLENDALE 76 SP-150

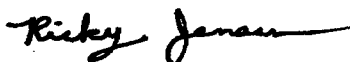
Dear Andy Malone,

Enclosed are the analysis results for Work Order number 6020583. All analysis were performed under strict adherence to our established Quality Assurance Plan. Any abnormalities are listed in the qualifier section of this report.

If you have any questions regarding these results, please feel free to contact us at any time. We appreciate the opportunity to service your environmental testing needs.

Sincerely,

  
For



Ricky D. Jensen  
Laboratory Director

California ELAP Certification Number 1677



www.basiclab.com

voice 530.243.7234 2218 Railroad Avenue  
fax 530.243.7494 Redding, California 96001


**Report To:** SOUNPACIFIC  
4612 GREENWOOD HEIGHTS DR  
KNEELAND, CA 95549

**Attention:** Andy Malone  
**Project:** GLENDALE 76 SP-150

**Lab No:** 6020583  
**Reported:** 03/03/06  
**Phone:** 707-269-0884  
**P.O. #**

**TPH Gasoline Range Organics**

Analyte	Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
<b>MW-1 Water (6020583-01) Sampled:02/14/06 00:00 Received:02/16/06 10:09</b>									
Gasoline	ug/l	641			50.0	EPA 8015/8260	02/16/06	02/16/06	B6B0517
Benzene	"	25.4			0.5	"	"	"	"
Toluene	"	128	R-01		5.0	"	02/16/06	"	"
Ethylbenzene	"	28.7			0.5	"	02/16/06	"	"
Xylenes (total)	"	117			1.0	"	"	"	"
Methyl tert-butyl ether	"	29.2			1.0	"	"	"	"
Surrogate: 4-Bromofluorobenzene		104 %			43-155	"	"	"	"
<b>MW-2 Water (6020583-02) Sampled:02/14/06 00:00 Received:02/16/06 10:09</b>									
Gasoline	ug/l	ND			50.0	EPA 8015/8260	02/16/06	02/16/06	B6B0517
Benzene	"	ND			0.5	"	"	"	"
Toluene	"	ND			0.5	"	"	"	"
Ethylbenzene	"	ND			0.5	"	"	"	"
Xylenes (total)	"	ND			1.0	"	"	"	"
Methyl tert-butyl ether	"	36.0			1.0	"	"	"	"
Surrogate: 4-Bromofluorobenzene		103 %			43-155	"	"	"	"
<b>MW-3 Water (6020583-03) Sampled:02/14/06 00:00 Received:02/16/06 10:09</b>									
Gasoline	ug/l	ND			50.0	EPA 8015/8260	02/16/06	02/16/06	B6B0517
Benzene	"	ND			0.5	"	"	"	"
Toluene	"	ND			0.5	"	"	"	"
Ethylbenzene	"	ND			0.5	"	"	"	"
Xylenes (total)	"	ND			1.0	"	"	"	"
Methyl tert-butyl ether	"	14.1	R-01		10.0	"	"	"	"
Surrogate: 4-Bromofluorobenzene		101 %			43-155	"	"	"	"

  
Approved By

Basic Laboratory, Inc.  
California D.O.H.S. Cert #1677



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voice 530.243.7234 2218 Railroad Avenue  
fax 530.243.7494 Redding, California 96001

**Report To:** SOUNPACIFIC  
4612 GREENWOOD HEIGHTS DR  
KNEELAND, CA 95549

**Attention:** Andy Malone  
**Project:** GLENDALE 76 SP-150


**Lab No:** 6020583  
**Reported:** 03/03/06  
**Phone:** 707-269-0884  
**P.O. #**

**TPH Diesel & Motor Oil**

Analyte	Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
<b>MW-1 Water (6020583-01) Sampled:02/14/06 00:00 Received:02/16/06 10:09</b>									
Diesel	ug/l	ND	QR-02		56	EPA 8015 MOD	03/01/06	02/17/06	B6B0425
Motor Oil	"	ND			56	"	"	"	"
Surrogate: Octacosane		64.6 %		50-150		"	"	"	"
<b>MW-2 Water (6020583-02) Sampled:02/14/06 00:00 Received:02/16/06 10:09</b>									
Diesel	ug/l	ND	QR-02		50	EPA 8015 MOD	02/28/06	02/17/06	B6B0425
Motor Oil	"	116			50	"	"	"	"
Surrogate: Octacosane		97.8 %		50-150		"	"	"	"
<b>MW-3 Water (6020583-03) Sampled:02/14/06 00:00 Received:02/16/06 10:09</b>									
Diesel	ug/l	55	QR-02		50	EPA 8015 MOD	02/28/06	02/17/06	B6B0425
Motor Oil	"	93			50	"	"	"	"
Surrogate: Octacosane		89.8 %		50-150		"	"	"	"

**Notes and Definitions**

R-01	The Reporting Limit and Detection Limit for this analyte have been raised due to necessary sample dilution.
QR-02	The RPD result for the MS/MSD exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the detection limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
<	Less than reporting limit
≤	Less than or equal to reporting limit
>	Greater than reporting limit
≥	Greater than or equal to reporting limit
MDL	Method Detection Limit
RL/ML	Minimum Level of Quantitation
MCL/AL	Maximum Contaminant Level/Action Level
mg/kg	Results reported as wet weight
TTLCL	Total Threshold Limit Concentration
STLCL	Soluble Threshold Limit Concentration
TCLP	Toxicity Characteristic Leachate Procedure



Approved By

Basic Laboratory, Inc.  
California D.O.H.S. Cert #1677



## **Appendix B**



## **Standard Operating Procedures**

### **Groundwater Level Measurements and Free Phase Hydrocarbon Measurements**

All SounPacific staff and contractors shall adopt the following procedures any time that groundwater elevations are determined for the purposes of establishing groundwater gradient and direction, and prior to any sampling event.

Wells are to be tested for free phase hydrocarbons (free product) before the first development or sampling of any new well, and in any well that has historically contained free product.

#### **Equipment Checklist**

- ☐ Combination water level / free phase hydrocarbon indicator probe (probe)
- ☐ Gauging Data / Purge Calculations Sheet
- ☐ Pencil or Pen/sharpie
- ☐ Disposable Gloves
- ☐ Distilled Water and or know water source on site that is clean
- ☐ Alconox (powder) or Liquinox (liquid) non-phosphate cleaners—do not use soap!
- ☐ Buckets or Tubs for decontamination station
- ☐ Tools necessary to access wells
- ☐ Site Safety Plan
- ☐ This Standard Operating Procedure
- ☐ Notify Job site business that you will be arriving to conduct work.

#### **Procedure**

1. Review Site Safety Plan and utilize personal protection appropriate for the contaminants that may be encountered.
2. Access and open all monitoring wells to be measured. Allow wells to equilibrate for approximately 15 minutes before taking any measurements.

3. Decontaminate probe with Alconox or Liquinox solution, and rinse with distilled water.
4. Determine the diameter of the well to be measured and indicate this on the Gauging Data / Purge Calculations Sheet.
5. Words of caution: Please be careful with water level and product meters probes are not attached with high strength material so please make sure to avoid catching the end on anything in the well and make sure not to wind reel to the point that it could pull on the probe. ***If product is suspect in a well, go to step 6, if no product is suspected go to step 7 below.***
6. **When product is present or suspected:** use the product level meter. Clip the static charge clamp to the side of the well casing. Then lower probe into the well through the product/water interface about one foot if possible. Then slowly raise the probe back up through the product/water interface layer and record the level as the tone changes from solid to broken-record this level in the Gauging Data / Purge Calculations Sheet to the nearest 0.01 foot (DTP). Continue to raise the probe up through the product until the tone stops completely-record this level on the Gauging Data / Purge Calculations Sheet to the nearest 0.01 foot (DTW). Then go to step 8.
7. **When no product is present or suspected:** If no free product is present, record the depth of the water (to the nearest 0.01 foot) relative to the painted black mark on the top of the well casing. Leave the probe in the well just a hair above the water level to ensure the well as equilibrated. As the well rises, the tone will sound. Make sure no increase in water levels have occurred in over a ten-minute period. Water levels can lower as well as rise. Make sure you note when the level you keep lowering the probe to has remained stable for at least ten minutes. Once this has been accomplished, please record this level in the Gauging Data / Purge Calculations Sheet to the nearest 0.01 foot (DTW).
8. Turn off the probe, and use the probe to determine the depth to the bottom of the well relative to the top of the well casing. This is the depth to bottom measurement (DTB).
9. Decontaminate probe and tape by washing in an Alconox/Liquinox solution (***read directions on solution for ratio of water to cleanser***) and use the toothbrush provided to remove any foreign substance from the probe and tape. Then triple rinse probe and tape with clean water and then proceed to take measurements in the next well.
10. If sampling is to occur, proceed to implement SounPacific's Standard Operating Procedure for Monitoring Well Purging and Sampling. If no sampling is to be performed, close and secure all wells and caps.



# Standard Operating Procedures

## Monitoring Well Purging and Groundwater Sampling

All SounPacific employees and contractors shall adopt the following procedures any time that groundwater samples are to be taken from an existing groundwater monitoring well.

Prior to the implementation of these procedures, the groundwater level **MUST** be measured and the presence of free phase hydrocarbons determined in accordance with SounPacific's Standard Operating Procedures for Groundwater Level Measurements and Free Phase Hydrocarbon Measurements.

### Equipment Checklist

- ☐ **Gauging Data / Purge Calculations Sheet used for water level determination**
- ☐ Chain of Custody Form
- ☐ pH/ Conductivity / Temperature meter
- ☐ Pencil or Pen
- ☐ Indelible Marker
- ☐ Calculator
- ☐ Disposable Gloves
- ☐ Distilled Water
- ☐ Alconox/liquinox liquid or powdered non-phosphate cleaner
- ☐ Buckets or Tubs for decontamination station
- ☐ Bottom-filling bailer or pumping device for purging
- ☐ Disposable bottom-filling bailer and emptying device for sampling
- ☐ String, twine or fishing line for bailers
- ☐ Sample containers appropriate for intended analytical method (check with lab)
- ☐ Sample labels
- ☐ Site Safety Plan
- ☐ Tools necessary to access wells
- ☐ Drum space on site adequate for sampling event

### **Procedure**

1. Review Site Safety Plan and utilize personal protection appropriate for the contaminants that may be encountered.
2. Measure groundwater levels and check for the presence of free product in accordance with the Standard Operating Procedures for Groundwater Level Measurements and Free Phase Hydrocarbon Measurements.

### **Purging**

3. Calculate and record the volume of standing water in each well using the information provided on the Gauging Data / Purge Calculations sheet.  
 $(DTB-DTW) \times \text{Conversion Factor} = \text{Casing Volume}.$
4. The purge volume shall be at least three times and no more than seven times the volume of standing water (the casing volume).
5. Purge the well by bailing or pumping water from the well into a calibrated receptacle, such as a five gallon bucket or tub with markings to indicate one gallon increments. Collect purgeate in a 55 gallon labeled drum and store on site. Drum labels should include the date, contents, site number, and SounPacific's name and telephone number.
6. Take measurements of pH, conductivity, temperature, and visual observations to verify the stabilization of these parameters. At least five measurements of these parameters should be made throughout the purging process. The parameters shall be considered stabilized if successive measurements vary by less than 0.25 pH units, 10% of conductivity in  $\mu\text{S}$ , and  $1^{\circ}\text{C}$  (or  $1.8^{\circ}\text{F}$ ). Continue purging until at least three times the casing volume has been removed, and the measured parameters have stabilized as indicated above. Do not exceed seven casing volumes.
7. Take a final depth to groundwater measurement and calculate the casing volume of the recharged well. Ideally, the casing volume should have recharged to at least 80% of the original measured casing volume before sampling commences. If due to slow recharge rates it is not feasible to wait for the well to fully recharge, then note this on the Gauging Data / Purge Calculation Sheet and proceed to sample following the procedure below.

## **Sampling**

8. **After completing groundwater measurement, and checking for free product if necessary, in accordance with SounPacific's Standard Operating Procedures for Groundwater Level Measurements and Free Phase Hydrocarbon Measurements, and after purging monitoring wells as described above, groundwater samples may be collected.**
9. Slowly lower a clean, previously unused disposable bailer into the well water approximately half of the bailer length, and allow the bailer to slowly fill.
10. Withdraw the full bailer from the monitoring well and utilize the included (clean and unused) bottom-emptying device to fill the necessary sample containers, and seal the container with the included PTFE (Teflon) lined cap.
11. When filling VOAs, fill the VOA completely full, with the meniscus rising above the rim of the bottle. Carefully cap the VOA and invert it and gently tap it to determine whether air bubbles are trapped inside. If the VOA contains air bubbles, refill the VOA and repeat this step.
12. All samples shall be labeled with the Sample ID, the Sample Date, and the Sample Location or Project Number. Use an indelible marker for writing on sample labels.
13. Record all pertinent sample data on the Chain of Custody.
14. Place samples in an ice chest cooled to 4°C with ice or "blue ice". Bottles should be wrapped in bubble wrap, and VOA's should be inserted in a foam VOA holder to protect against breakage. Samples are to be kept at 4°C until delivered to the laboratory. Any transference of sample custody shall be indicated on the Chain of Custody with the appropriate signatures as necessary.
15. Utilize clean, previously unused gloves, bailer and line, and bottom-emptying device for each well sampled.
16. When finished with all sampling, close and secure all monitoring wells.
17. Leave the site cleaner than when you arrived and drive safely.

# Appendix C

## GAUGING DATA/PURGE CALCULATIONS

Job Site: Glendale 76Job No.: SP-150Event: 15th Quarterly MonitoringDate: 2-14-06

**Soun Pacific**  
Environmental Services

(707) 269-0884

WELL NO.	DIA. (in.)	DTB (ft.)	DTW (ft.)	ST (ft.)	CV (gal.)	PV (gal.)	SPL (ft.)	Bailer Loads	Notes
MW-1	2	19.2	9.58	9.62	1.5	4.5			Most clear
MW-2	2	18.9	9.91	8.99	1.4	4.2			light turbid
MW-3	2	19.42	9.49	9.93	1.6	4.8			Turbid, High DO

## Explanation:

DIA. = Well Diameter  
 DTB = Depth to Bottom  
 DTW = Depth to Water  
 ST = Saturated Thickness (DTB-DTW)  
 CV = Casing Volume (ST x cf)  
 PV = Purge Volume (standard 3 x CV,  
 well development 10 x CV)  
 SPL = Thickness of Separate Phase Liquid

## Conversion Factors (cf):

2 in. dia. well cf = 0.16 gal./ft.  
 4 in. dia. well cf = 0.65 gal./ft.  
 6 in. dia. well cf = 1.44 gal./ft.

Sampler:

Tien-m. Tai

FILE



2/22/06  
 RECEIVED

## Well Gauging/Sampling Report

Sheet 1 of 3

Date: <u>2-14-06</u>		Project Name: <u>Glendale 76</u>		Project No: <u>SP-150</u>		Well Number: <u>MW-1</u>	
Analyses Tested: <u>TPH<sub>g</sub>, BTxE, MTBE, TPH<sub>d</sub>, TPH<sub>mo</sub></u>							
Sample Containers: <u>3 HLR VOAs, 2 1-L Bottles</u>							
Purge Technique:		<input type="checkbox"/> Bailor		<input checked="" type="checkbox"/> Pump			
Sonder Used:		<input type="checkbox"/> Water Meter		<input checked="" type="checkbox"/> Interface Meter			
Water & Free Product Levels							
Time	Depth to Water	Depth to Product	Notes				
1:29 pm	9.58		Shoen				
1:38	9.58						
End							
Field Measurements							
Time	Total Vol. Removed (gal)	pH	Temp (°F)	Cond. (µm/cm)	DO (mg/L)	DO (%)	
3:04 pm	0	4.82	57.67	0.058	0.40	3.9	
3:09	1.5	4.75	57.89	0.216	0.28	2.8	
3:14	3.0	4.76	57.94	0.068	0.31	3.1	
3:17	4.5	4.77	57.84	0.072	0.31	3.0	
Field Scientist: <u>Tien-yu Tai</u>							

Sheet  $\geq$  of  $\geq$ 

Analyses Tested: TPH<sub>g</sub>, BTX<sub>E</sub>, MBTE, TPH<sub>d</sub>, TPH<sub>mo</sub>

Purge Technique: ☐ Bailer ☒ Pump

Sounder Used: ☐ Water Meter ☐ Interface Meter ☒

Time	Depth to Water	Depth to Product	Notes
1:32 pm	9.92		Shoen
1:40	9.91		

Time	Total Vol. Removed (gal)	pH	Temp (F)	Cond. (ms/cm)	DO (mg/L)	DO (%)	
2:38 PM	0	5.03	58.26	0.109	0.65	6.4	
2:42	1.4	4.83	58.69	0.078	0.49	4.9	
2:47	2.8	4.91	58.74	0.109	0.48	4.8	
2:50	4.2	4.93	58.55	0.109	0.46	4.6	

**Field Scientist:**

Field Scientist: Tien-yu Tai

## Well Gauging/Sampling Report

Sheet 3 of 3

Date: <u>2-14-06</u>		Project Name: <u>Glendale 76</u>		Project No: <u>SP-150</u>		Well Number: <u>MW-3</u>	
Analyses Tested: <u>TPHg, BTXE, MBTE, TPHd, TPHnd</u>							
Sample Containers: <u>3 HIL VDAs, 2 1-L Bottles</u>							
Purge Technique:		<input type="checkbox"/> Bailor		<input checked="" type="checkbox"/> Pump			
Sounding Used:		<input type="checkbox"/> Water Meter		<input checked="" type="checkbox"/> Interface Meter			
<b>Water &amp; Free Product Levels</b>							
Time	Depth to Water	Depth to Product	Notes				
<u>1:35 pm</u>	<u>9.5</u>		<u>No Sheen</u>				
<u>1:42</u>	<u>9.49</u>						
<u>End</u>							
<b>Field Measurements</b>							
Time	Total Vol. Removed (gal)	pH	Temp (F)	Cond. (ms/cm)	DO (mg/L)	DO (%)	
<u>2:08 pm</u>	<u>0</u>	<u>4.61</u>	<u>56.91</u>	<u>0.049</u>	<u>3.51</u>	<u>34.0</u>	
<u>2:14</u>	<u>1.6</u>	<u>4.46</u>	<u>57.29</u>	<u>0.046</u>	<u>3.36</u>	<u>32.7</u>	
<u>2:19</u>	<u>3.2</u>	<u>4.53</u>	<u>57.19</u>	<u>0.045</u>	<u>2.57</u>	<u>24.9</u>	
<u>2:26</u>	<u>4.8</u>	<u>4.53</u>	<u>57.08</u>	<u>0.046</u>	<u>2.15</u>	<u>20.9</u>	
<div style="text-align: right; margin-right: 50px;"> Field Scientist: <u>Tien-yu Tai</u> </div>							